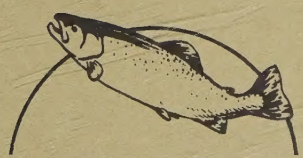
Northeastern Pacific Albacore Survey Part 2. Oceanographic and Meteorological Observations



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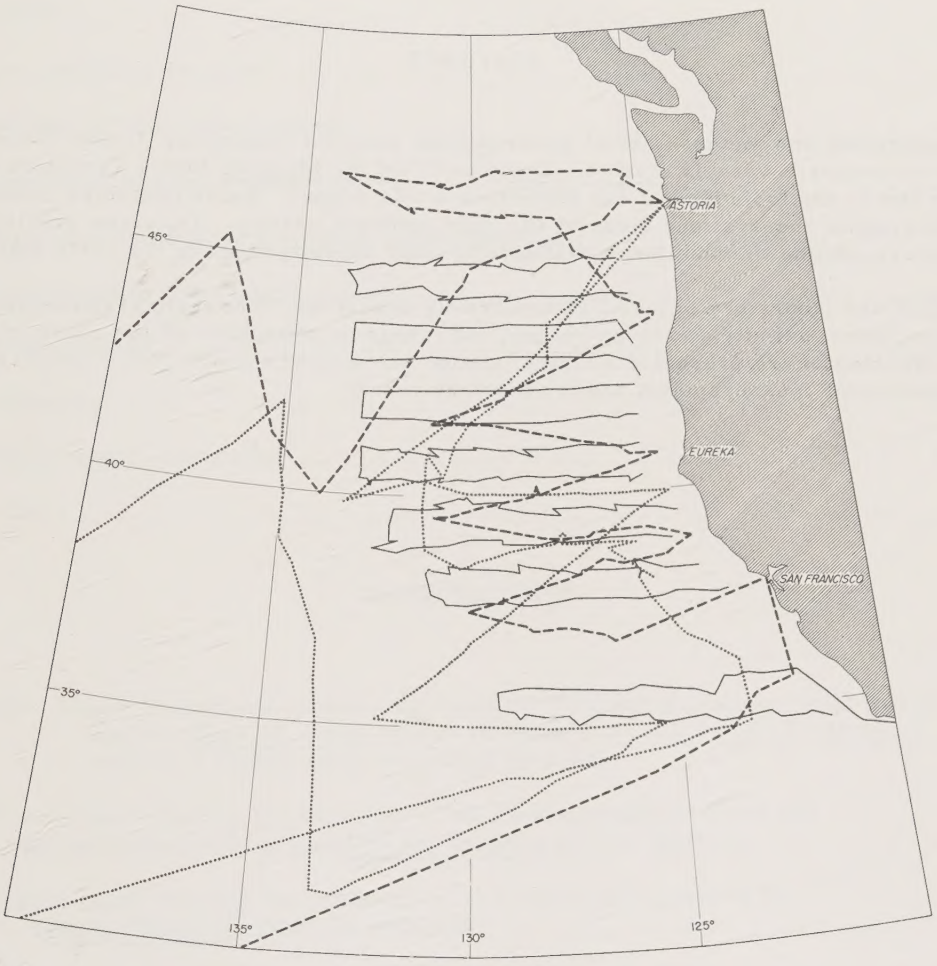

NORTHEASTERN PACIFIC ALBACORE SURVEY

PART 2. OCEANOGRAPHIC AND METEOROLOGICAL OBSERVATIONS

By

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ABSTRACT

Oceanographic and meteorological observations obtained aboard the United States Fish and Wildlife Service research vessels Hugh M. Smith and John R. Manning during Operation NEPAS in 1957 and en route to and from Hawaii are presented in this report. It also contains a summary of the limited oceanographic observations made by the eight contract vessels. Data are published without analysis or interpretation to make them available to other investigations in the north PACIFIC area.

The field and laboratory procedures are briefly described. The vertical and horizontal distribution of temperature, salinity, dissolved oxygen, and inorganic phosphate off the coasts of California Oregon, and Washington are presented in tables, station curves, and surface plots. Secchi disc, Forel color, and photometer measurements are tabulated by vessel.

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The Northeastern Pacific Albacore Survey (NEPAS) was a survey of the abundance and distribution of the albacore, Germo alalunga (Bonnaterre), conducted in a band approximately 350 miles wide off the coasts of northern California, Oregon, and Washington between 35°N. and 47°N. latitude from July 22 to August 1, 1957. Meteorological and oceanographic observations, the data from which are presented in this report, accompanied the biological sampling program. It was conducted by the Honolulu Biological Laboratory, Bureau of Commercial Fisheries as part of their Saltonstall-Kennedy albacore project in cooperation with fishery research agencies of California, Oregon, and Washington. The Pacific Marine Fisheries Commission provided liaison among the cooperating agencies.

A total of 11 vessels participated in the survey. The Fish and Wildlife Service research vessel Hugh M. Smith acted as coordinating vessel and conducted most of the detailed oceanographic observations (see fig. 1). The Fish and Wildlife Service research vessel John R. Manning made a preliminary fishing survey of the NEPAS area and did additional fishing in the areas where the contract vessels reported their better catches. The Manning also made a limited number of oceanographic observations. Her track is shown in figure 2. Nine contract vessels started the trolling survey but only seven completed their assigned tracks (see fig. 3). The other two vessels were forced to withdraw before they had contributed materially to the survey. The tracks of the seven contract vessels completing the survey are shown in the frontispiece. The owners, the observers and the agency providing the observer are listed in table 1.

This report contains the oceanographic and meteorological observations taken aboard the Smith and Manning and the surface observations made by the contract vessels. The field and laboratory procedures are also described. The biological data collected during the survey, except for the plankton, have already been reported by Graham (1959). The plankton data will be contained in a later report.

FIELD PROCEDURES

Water Sampling Program

Seventy oceanographic stations were occupied by the Hugh M. Smith at the positions shown in figure 1 and listed in table 2. From Honolulu to 38°35'N., 142°28'W. and from 33°36'N., 126°30'W. to Honolulu, Nansen bottle casts were made at 0800 and 2000 zone time (total 30). Only one cast was made each day (total 40) in the survey area since the vessel usually hove to at night, in order to make a continuous trolling survey along her track. Trolling was conducted at 6.5 knots during the day.

At each oceanographic station a cast of 13 Nansen bottles was made to approximately 1200 meters. The spacing of the bottles in the upper 300 meters was determined by the characteristics of a bathythermograph trace obtained just prior to the station. The remaining bottles were placed at standard depths. Paired protected reversing thermometers were attached to each bottle. All but the upper four bottles (those at approximately 100 meters or less) carried an unprotected reversing thermometer.

Water samples were drawn from each Nansen bottle for salinity, oxygen, and inorganic phosphate determinations. At stations 99, 139, 147, and 156 additional samples were drawn for boron analysis. These samples were shipped to Mr. James Gast of the University of Washington for analysis.

[1/] Presently employed at the Bureau of Commercial Fisheries Biological Laboratory, Seattle, Washington.

[2/] Formerly the Pacific Oceanic Fishery Investigations.

Surface samples for determination of salinity and inorganic phosphate were taken at most of the off-station BT casts. Surface salinity samples were taken by the Hugh M. Smith at approximately 30-mile intervals from Honolulu to the survey area, from the survey area to Honolulu, and surface salinity and inorganic phosphate samples were taken at each off-station BT cast in the survey area. Salinity and inorganic phosphate samples were taken by the John R. Manning at approximately 60-mile intervals from Honolulu to Astoria and at approximately 30-mile intervals from Astoria to 30°N. latitude (see fig. 2 for her track).

Bathythermograph Observations

A 900-ft. BT cast was made from the Hugh M. Smith, before and after each Nansen bottle cast. When surface temperatures were 66°F. or less, BT casts were made at intervals of not more than 15 miles, when abrupt surface temperature changes were indicated on the recording thermograph, and each time albacore were landed if one hour had elapsed since the previous lowering. At surface temperatures greater than 66°F. two BT's were taken between oceanographic stations. The positions of and observations made at the Smith's BT casts are given in table 3.

From the John R. Manning, 900-ft. BT casts were made at approximately 30-mile intervals and also before and after each gill-net station. From Astoria, Oregon, to about 30°N. latitude, 450-ft. BT casts were also made at 0300 zone time on the nights when the gill nets were set. The positions of and the observations made at the Manning's BT casts are given in table 4.

The BT slides were processed by the United States Navy Hydrographic Office and the data were used to construct the temperature cross sections along the vessel tracks; Hugh M. Smith in figures 4 to 16 and John R. Manning in figures 17 to 27. The portion of the tracks included in each of the cross sections is indicated by the letters on the vessel tracks (figs. 1 and 2).

Meteorological Observations

Synoptic weather observations as outlined in the United States Weather Bureau Circular M (1956) were made aboard both our vessels at 0000, 0600, 1200, and 1800 GCT and transmitted to the United States Weather Bureau at Honolulu or San Francisco, whenever radio conditions permitted. A summary of these observations as recorded on United States Weather Bureau Form 1210F are listed in tables 5 (Smith) and 6 (Manning).

Subsurface Illumination and Water Color Measurements

Measurements of the percentage of subsurface illumination relative to that at the sea surface were made from the John R. Manning at 75 stations. Measurements were made not earlier than two hours after sunrise and not later than two hours before sunset. A Schueler photometer, which has been described by Callaway (1957), was used. The response curve of the photometer matched the standard curve of the International Commission on Illumination which has a spectral range of 430 to 700 millimicrons and a peak sensitivity at 550 millimicrons[3/]. The total incident light was estimated in foot candles with a standard camera exposure meter. Because the cable to the sea cell broke repeatedly, the 1-percent level of illumination was measured only occasionally. Some values at the 50-percent and 10-percent levels are also open to question because the shadow of the ship's hull and rigging interfered. The results are given in table 7.

Secchi disc and Forel water color observations were made from both the Manning and Smith. The Secchi disc observations were made in the manner described in the United States Navy Hydrographic Office Publication 607 (1955). Water color as it appeared according to Forel's scale against the Secchi disc background was also made at each lowering. Aboard the Smith these observations were made at 0800 zone time while operating outside the NEPAS area. Within the area they were made daily at 1300 zone time and after each albacore school had been worked when light and sea conditions were suitable. The Smith's results have been included in table 2. Aboard the Manning they were made simultaneously with the photometer measurements and have been included in table 7.

Observations by the Charter Vessels

Each charter vessel was provided with bucket thermometer and a Secchi disc. They made surface temperature observations to the nearest half degree every four hours while underway and after each albacore school had been worked. The observed temperatures are not included in this report but have been used in constructing the surface temperature plot, figure 28.

3/ Weston Photronic Photoelectric Cells, Weston Electrical Instrument Corporation Circular B-27-A, February 1949.

Secchi disc and cloud cover observations were made each day at local noon. The results are listed in table 8.

LABORATORY PROCEDURES

Chemistry

Salinity samples were placed in glass bottles and sealed with paraffin-impregnated corks and screw caps. Double titrations were made in the Honolulu laboratory using a modification of the Knudsen method. This modification (Van Landingham 1957) results in a stoichiometric end point and involves the use of an adsorption indicator, phenosafranin, in the presence of starch as a protective colloid. The surface salinities at the off-station BT's are given in tables 3 (Smith) and 4 (Manning) and those for the Smith's oceanographic stations in table 9. A plot of the surface salinity is shown in figure 29.

Dissolved oxygen analyses were performed aboard the Hugh M. Smith by the Winkler method. These results are also contained in table 9.

The inorganic phosphate samples were placed in screw-cap culture tubes, sealed with plastic tape, and quick, dry-frozen for analysis ashore. Analysis was performed in the Honolulu laboratory using a modification of Denige's method developed by Van Landingham[4/]. The values for the surface samples taken at the off-station BT's are included in tables 3 (Smith) and 4 (Manning) and the values for various depths at the Smith's oceanographic stations 19 through 139 are listed in table 9.

Oceanographic Processing

Processing of the oceanographic data was performed at the Honolulu laboratory under the supervision of Mrs. M. L. Godfrey.

The presentation of the data is similar to that of King et al. (1957) in that only the observed station data are listed (table 9). In order to facilitate further use of the data, graphs showing the complete set of curves are also given for each station.

In the upper 300 meters one of the BT traces taken at the station was used as a guide in constructing the temperature depth curve for the reversing thermometer readings. To insure continuity among the various parameters, salinity and oxygen are shown as curves plotted against temperature rather than depth (Montgomery 1954). Station to station continuity was maintained by utilizing the curves for adjacent stations in constructing the curves for each parameter.

Although the inorganic phosphate data are included in the tabulations, they have been omitted from the station curves. This was because values in the vicinity of the oxygen minimum seemed to vary erratically. This will require further study and comparison with data from other sources to determine whether the variations are real or may have been caused by handling of the frozen samples.

Isopleths of thermosteric anomaly are shown on each station graph in lieu of the customary isopleths of sigma-t. This was done to permit the computation of dynamic heights by the method of Montgomery and Wooster (1954). This method differs from the conventional method (LaFond 1951) in that the pressure terms of the specific volume anomaly are neglected. The surface heights (geostrophic currents) relative to the 1,000 decibar level are shown in figure 30 to indicate the general circulation through the area.

[4/] Van Landingham, John W. MS. Stabilizing heteropoly color in the estimation of phosphate-phosphorus in oceanic waters. U. S. Fish and Wildlife Service, Bureau of Commercial Fisheries, Honolulu Biological Laboratory.

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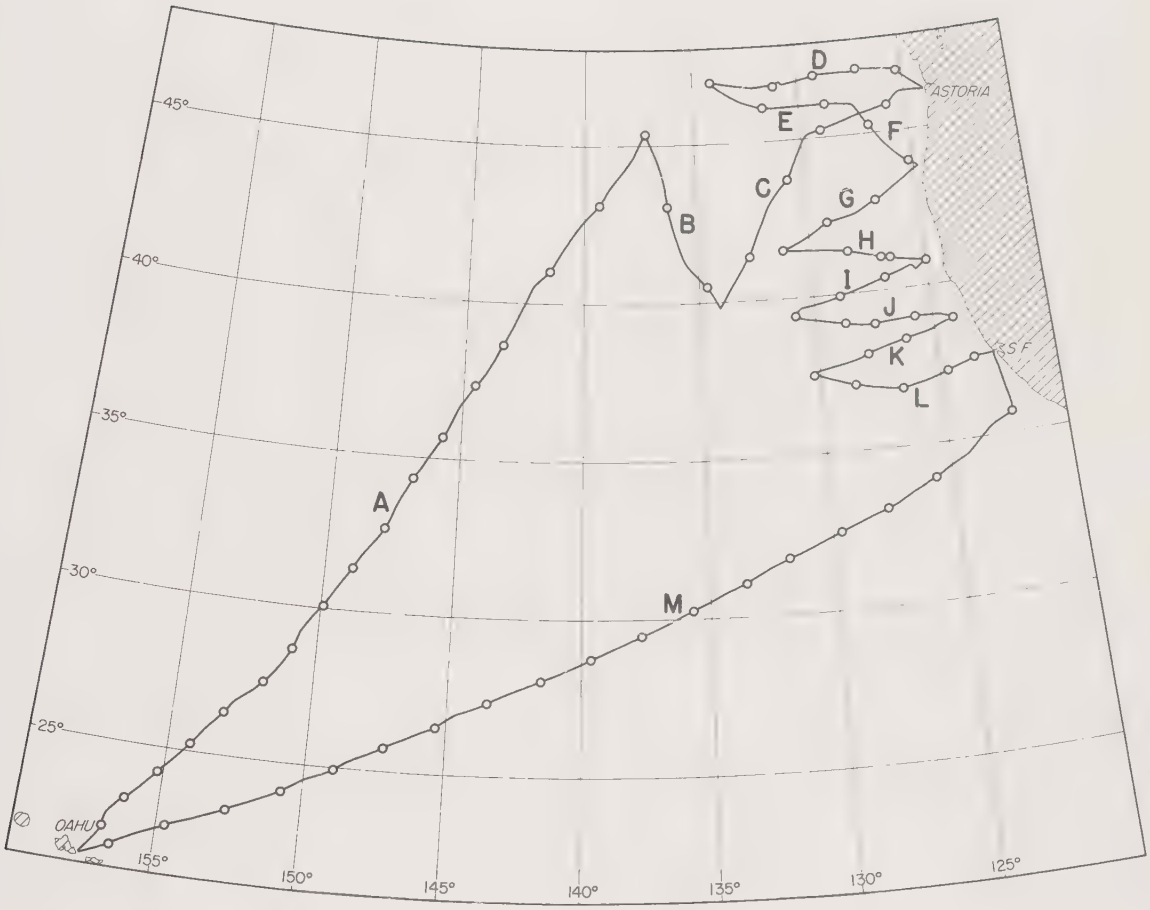


Figure 1.--Track chart, Hugh M. Smith cruise 40 (NEPAS), July 1-September 5, 1957. Circles indicate oceanographic station positions and letters designate the location of the temperature sections shown in figures 4-16.

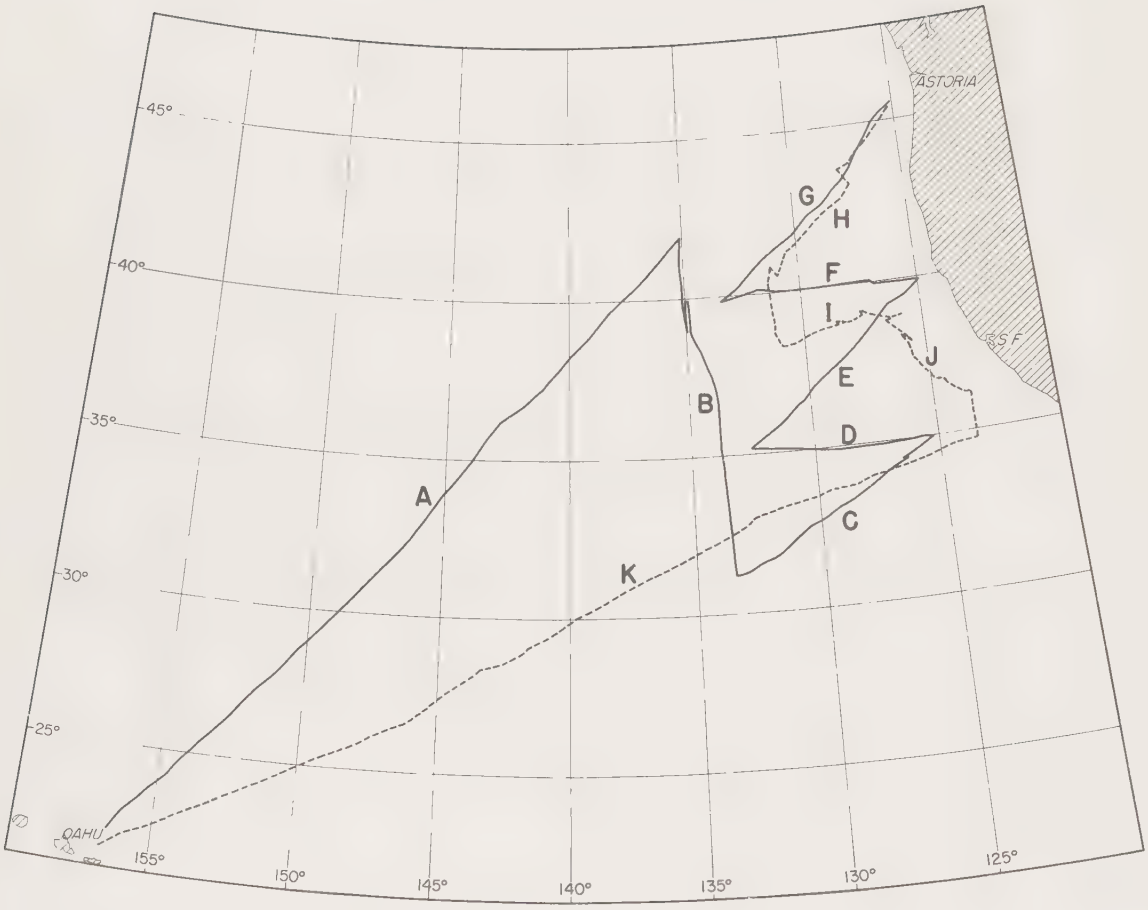


Figure 2.--Track chart, John R. Manning cruise 36 (NEPAS), June 11-August 20, 1957. Solid line - Honolulu to Astoria. Dashed line - Astoria to Honolulu. Letters designate the location of the temperature sections shown in figures 17-27.

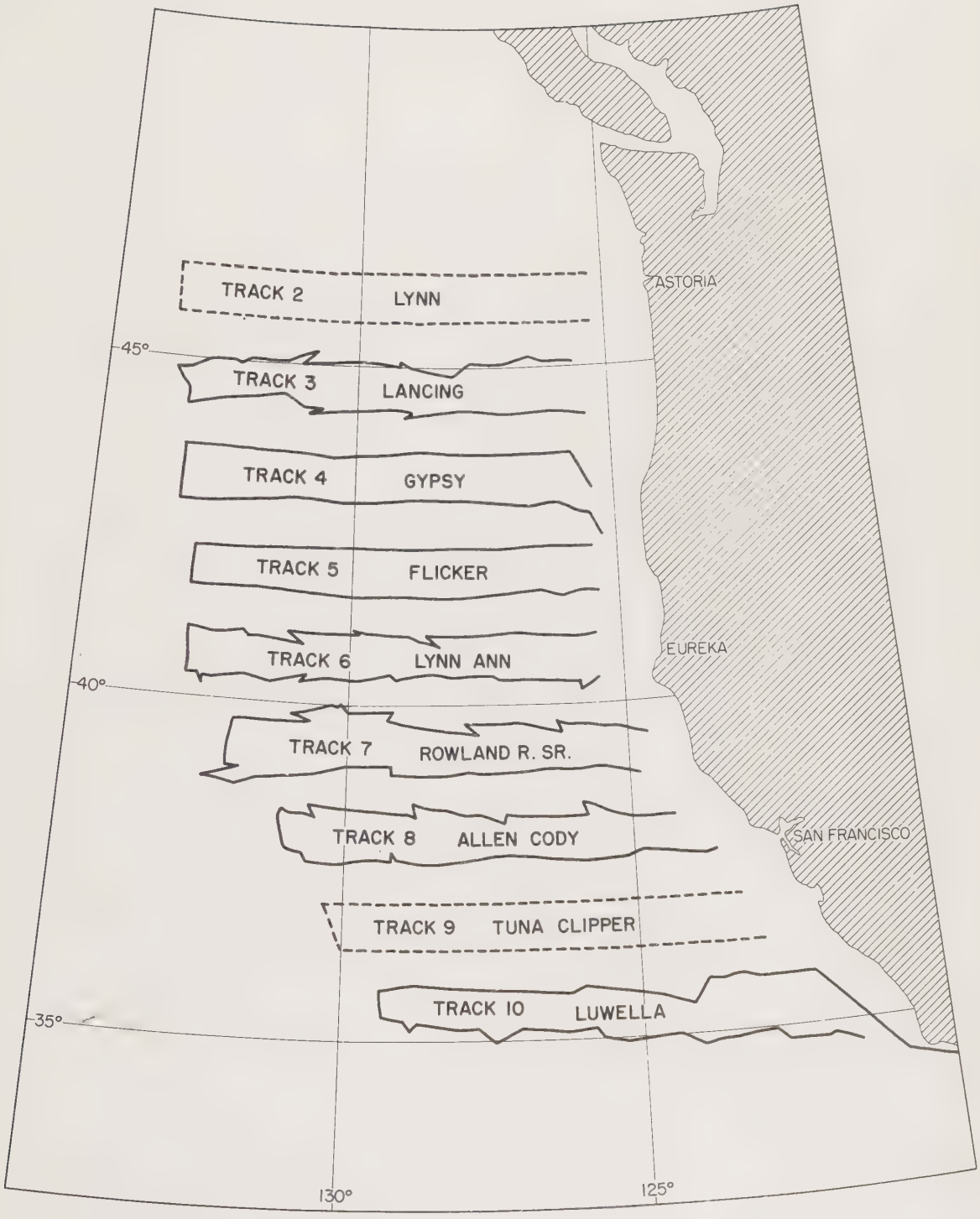


Figure 3.--Track chart, NEPAS charter vessels. July 22-August 1, 1957. Solid lines indicate actual tracks, broken lines indicate tracks assigned but not completed.

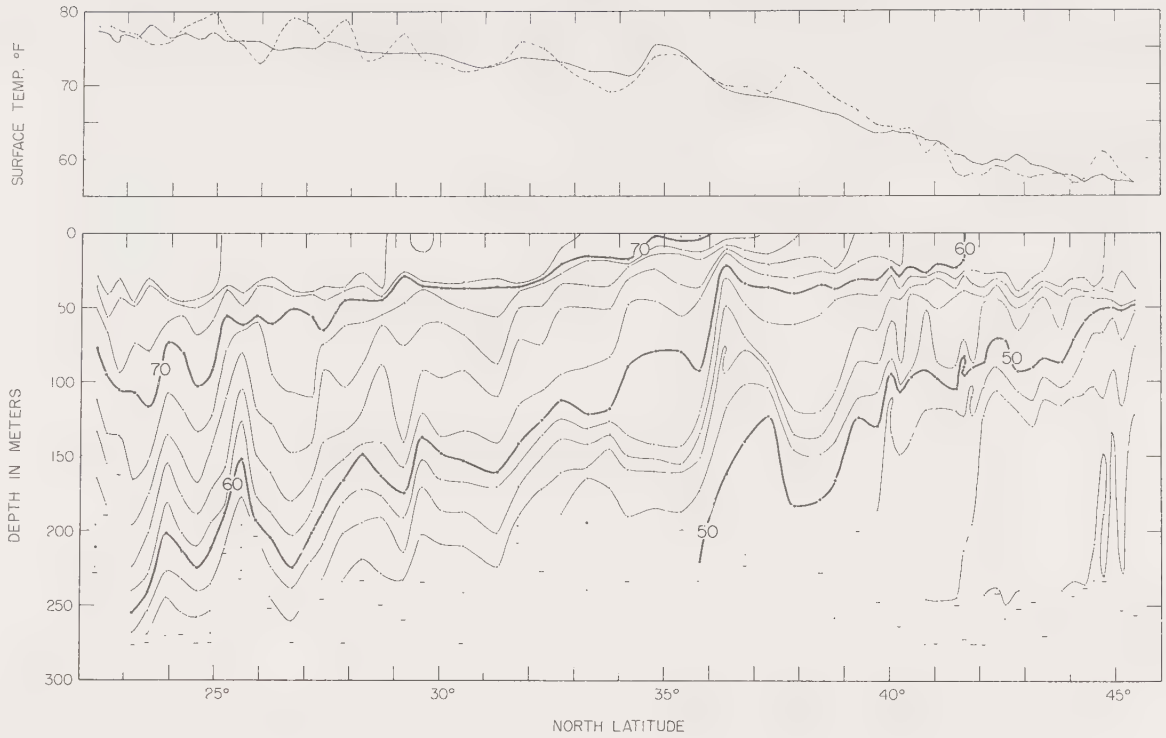


Figure 4.--Temperature sections from BT casts along Section A (see fig. 1), Hugh M. Smith cruise 40 (NEPAS), July 1-September 5, 1957. Upper panel air (dotted) and sea surface (solid) temperatures. Lower panel temperatures from BT slides. Dashes indicate the depth of casts.

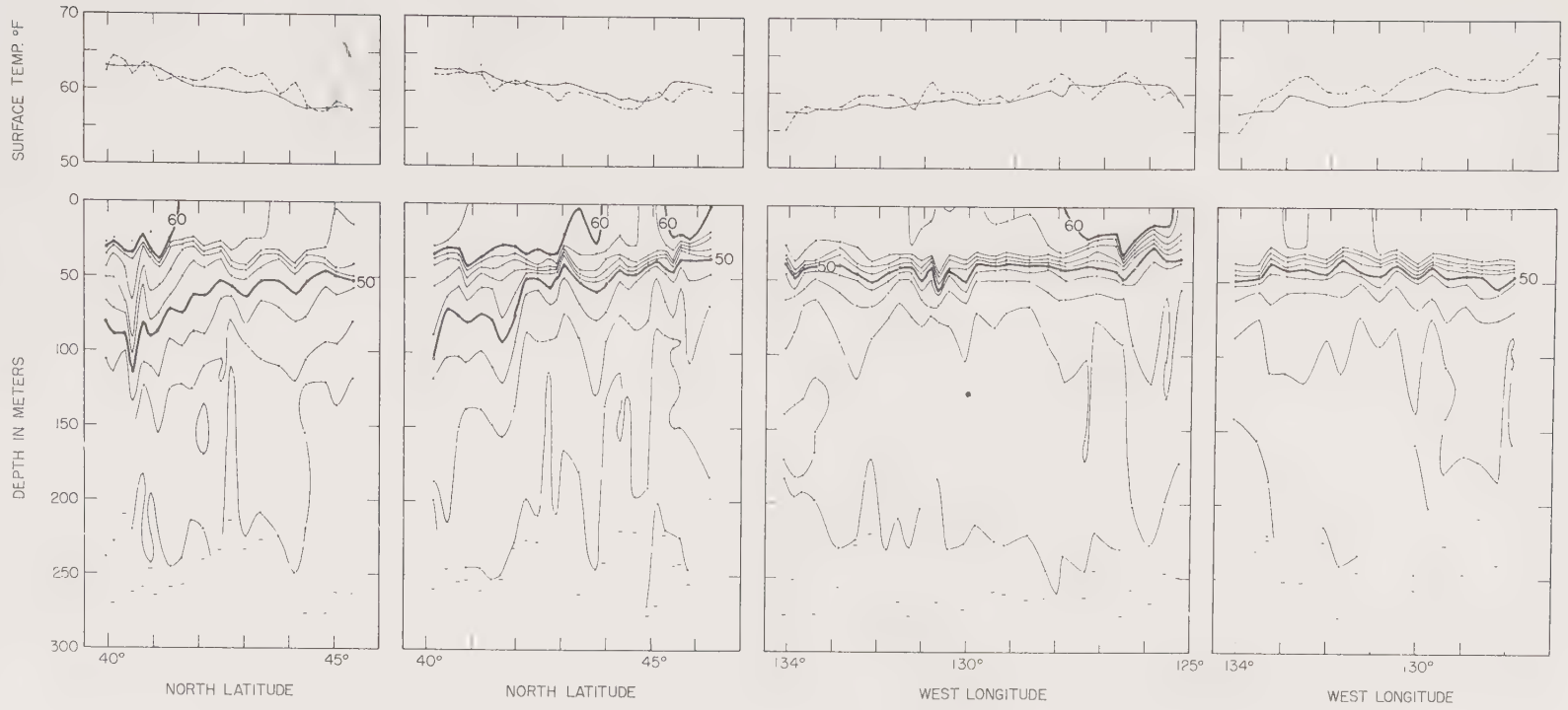


Figure 5.--Temperature sections from BT casts along Section B (see fig. 1), Hugh M. Smith cruise 40 (NEPAS), July 1-September 5, 1957. Upper panel air (dotted) and sea surface (solid) temperatures. Lower panel temperatures from BT slides. Dashes indicate the depth of casts.

Figure 6.--Same along Section C (fig. 1).

Figure 7.--Same along Section D (fig. 1).

Figure 8.--Same along Section E (fig. 1).

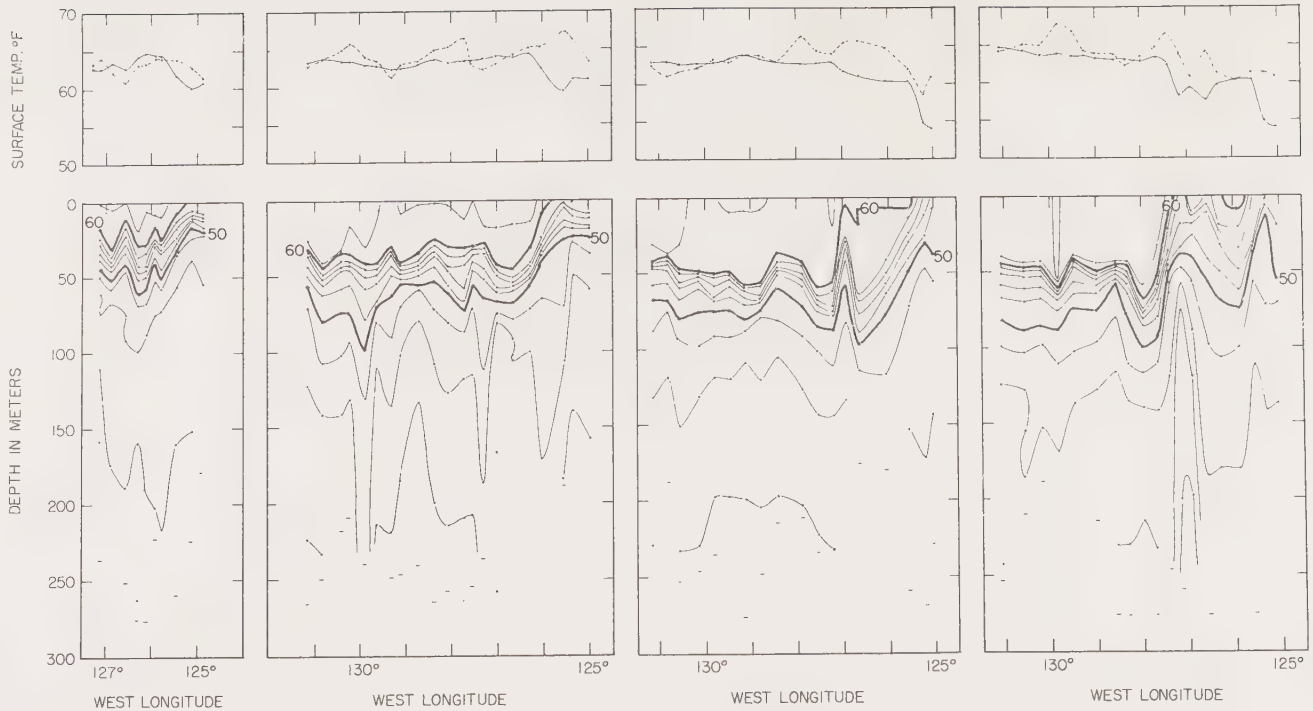


Figure 9.--Temperature sections from BT casts along Section F (see fig. 1), Hugh M. Smith cruise 40 (NEPAS), July 1-September 5, 1957. Upper panel air (dotted) and sea surface (solid) temperatures. Lower panel temperatures from BT slides. Dashes indicate the depth of casts.

Figure 10.--Same along Section G (fig. 1).

Figure 11.--Same along Section H (fig. 1).

Figure 12.--Same along Section I (fig. 1).

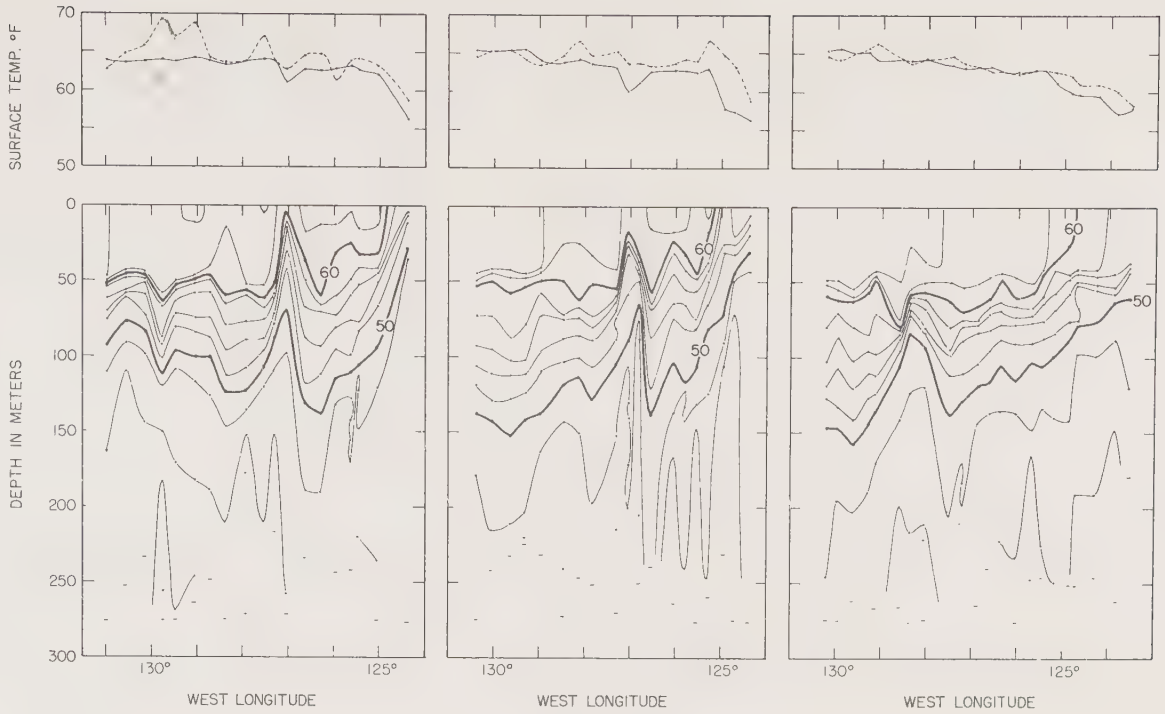


Figure 13.--Temperature sections from BT casts along Section J (see fig. 1), Hugh M. Smith cruise 40 (NEPAS), July 1-September 5, 1957. Upper panel air (dotted) and sea surface (solid) temperatures. Lower panel temperatures from BT slides. Dashes indicate the depth of casts.

Figure 14.--Same along Section K (fig. 1).

Figure 15.--Same along Section L (fig. 1).

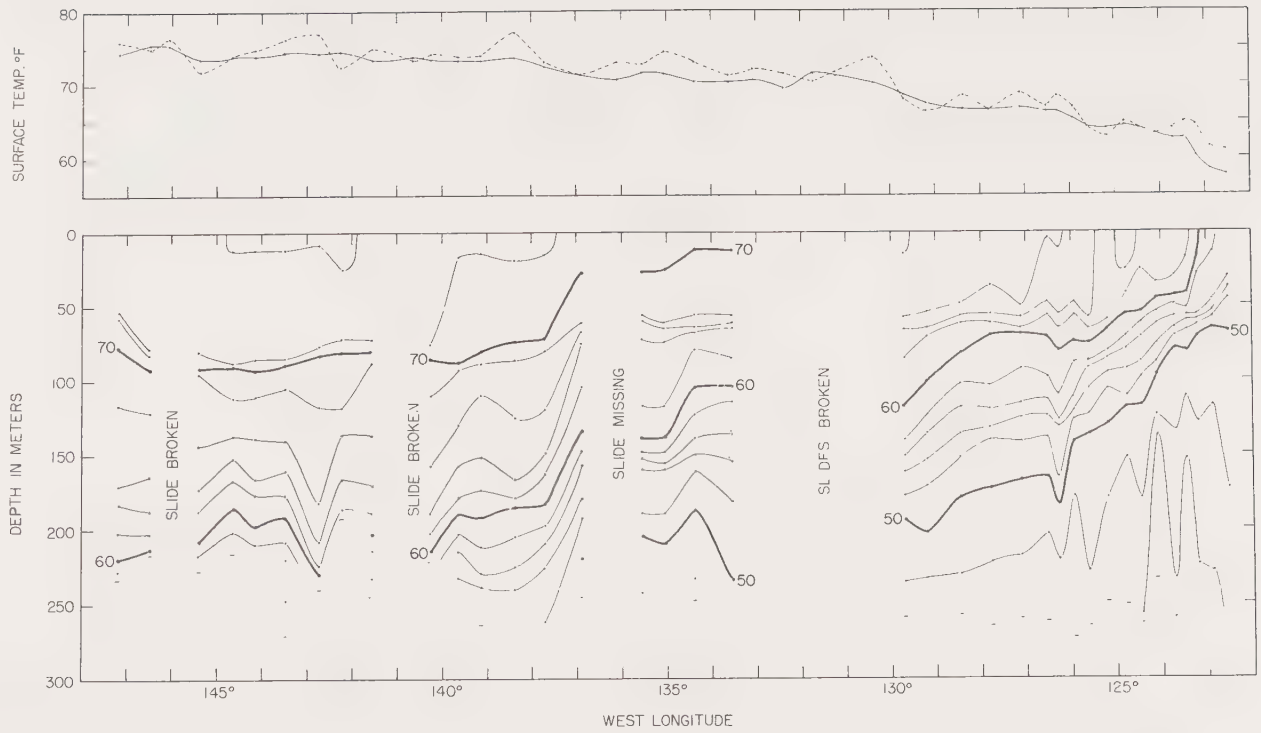


Figure 16.--Temperature sections from BT casts along Section M (see fig. 1), Hugh M. Smith cruise 40 (NEPAS), July 1-September 5, 1957. Upper panel air (dotted) and sea surface (solid) temperatures. Lower panel temperatures from BT slides. Dashes indicate the depth of casts.

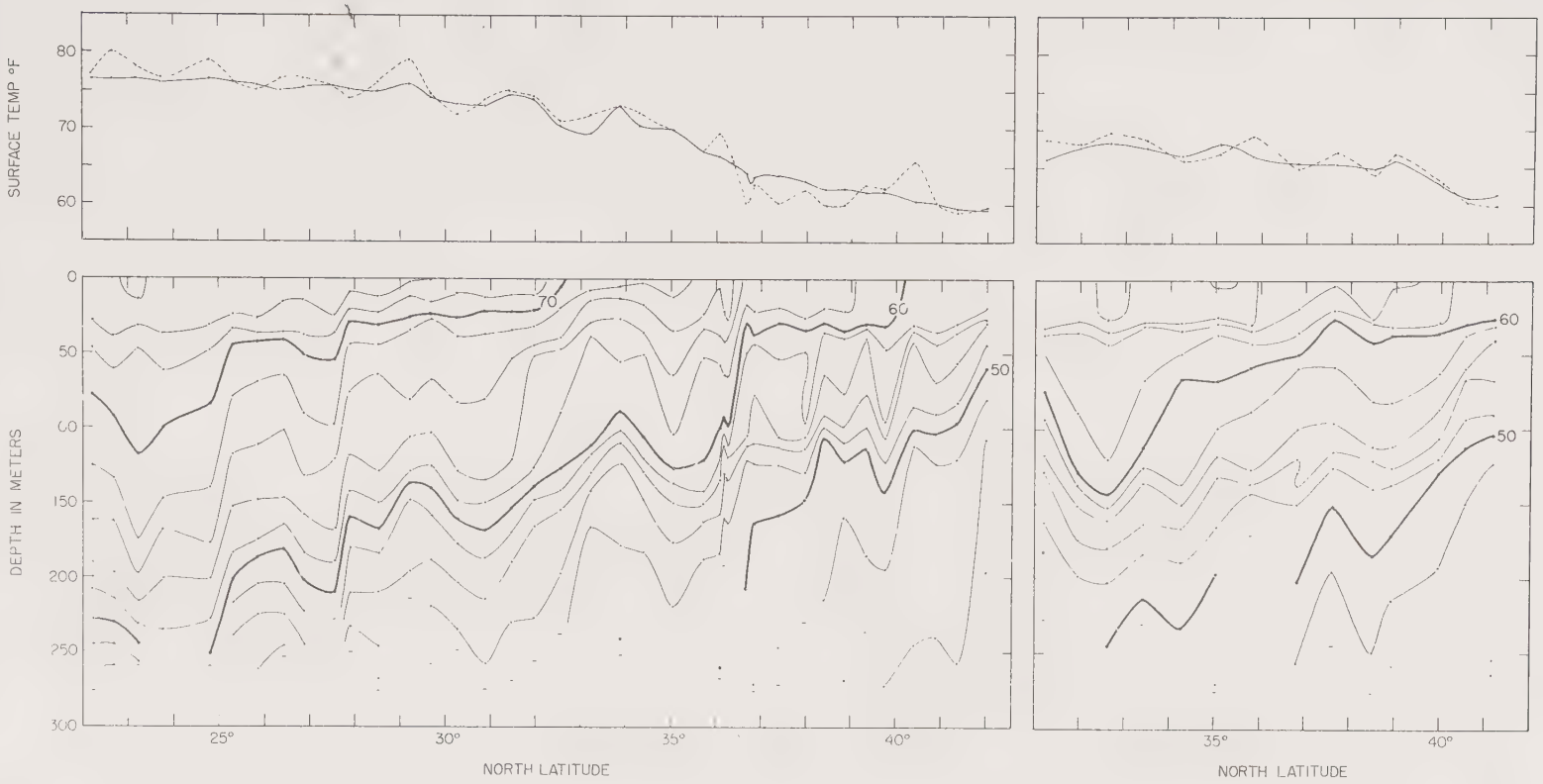


Figure 17.--Temperature sections from BT casts along Section A (see fig. 2), John R. Manning cruise 36 (NEPAS), June 11-August 20, 1957. Upper panel air (dotted) and sea surface (solid) temperatures. Lower panel temperatures from BT slides. Dashes indicate the depth of casts.

Figure 18.--Same along Section B (fig. 2).

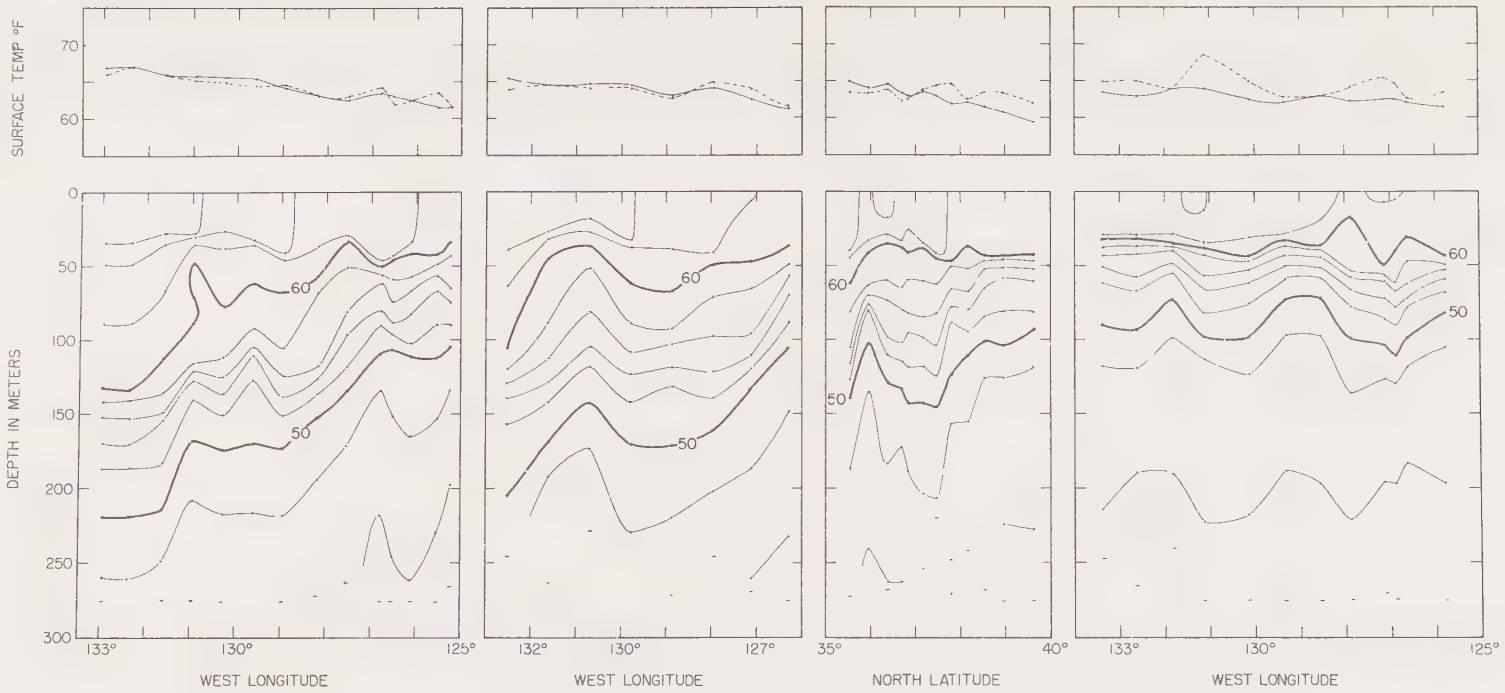


Figure 19.--Temperature sections from BT casts along Section C (see fig. 2), John R. Manning cruise 36 (NEPAS), June 11-August 20, 1957. Upper panel air (dotted) and sea surface (solid) temperatures. Lower panel temperatures from BT slides. Dashes indicate the depth of casts.

Figure 20.--Same along Section D (fig. 2).

Figure 21.--Same along Section E (fig. 2).

Figure 22.--Same along Section F (fig. 2).

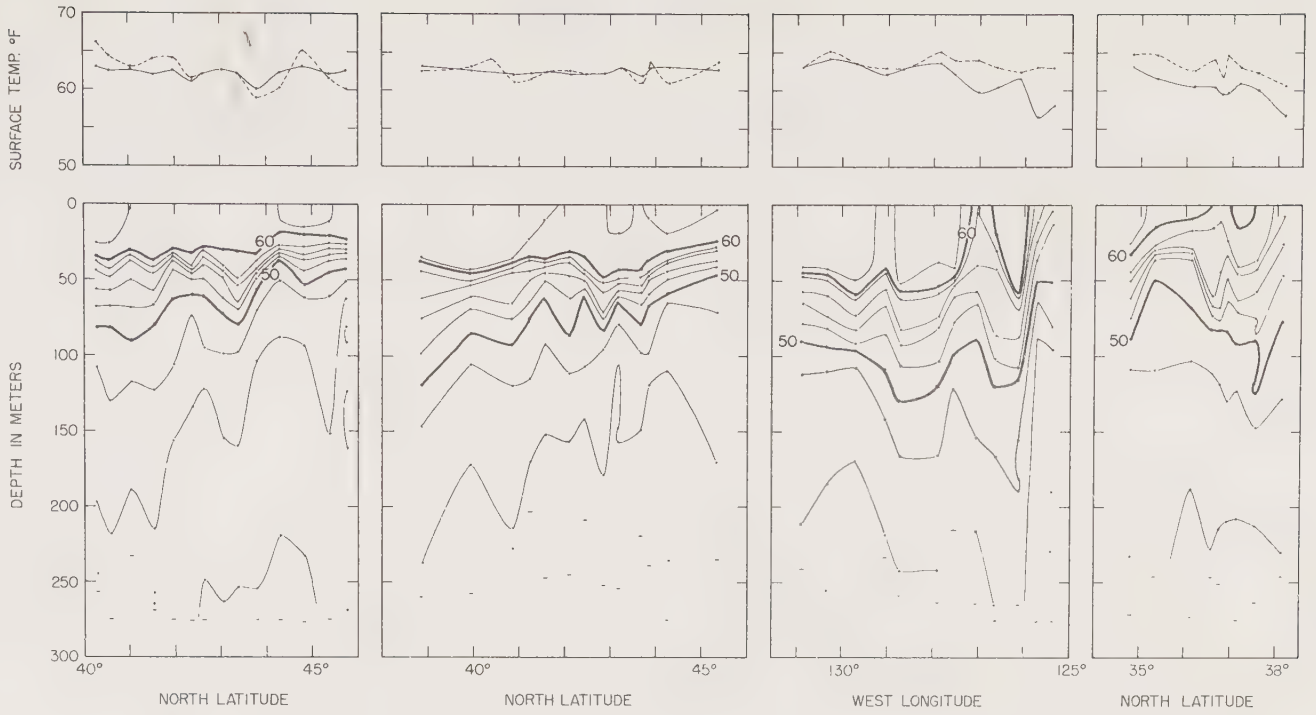


Figure 23.--Temperature sections from BT casts along Section G (see fig. 2), John R. Manning cruise 36 (NEPAS), June 11-August 20, 1957. Upper panel air (dotted) and sea surface (solid) temperatures. Lower panel temperatures from BT slides. Dashes indicate the depth of casts.

Figure 24.--Same along Section H (fig. 2).

Figure 25.--Same along Section I (fig. 2).

Figure 26.--Same along Section J (fig. 2).

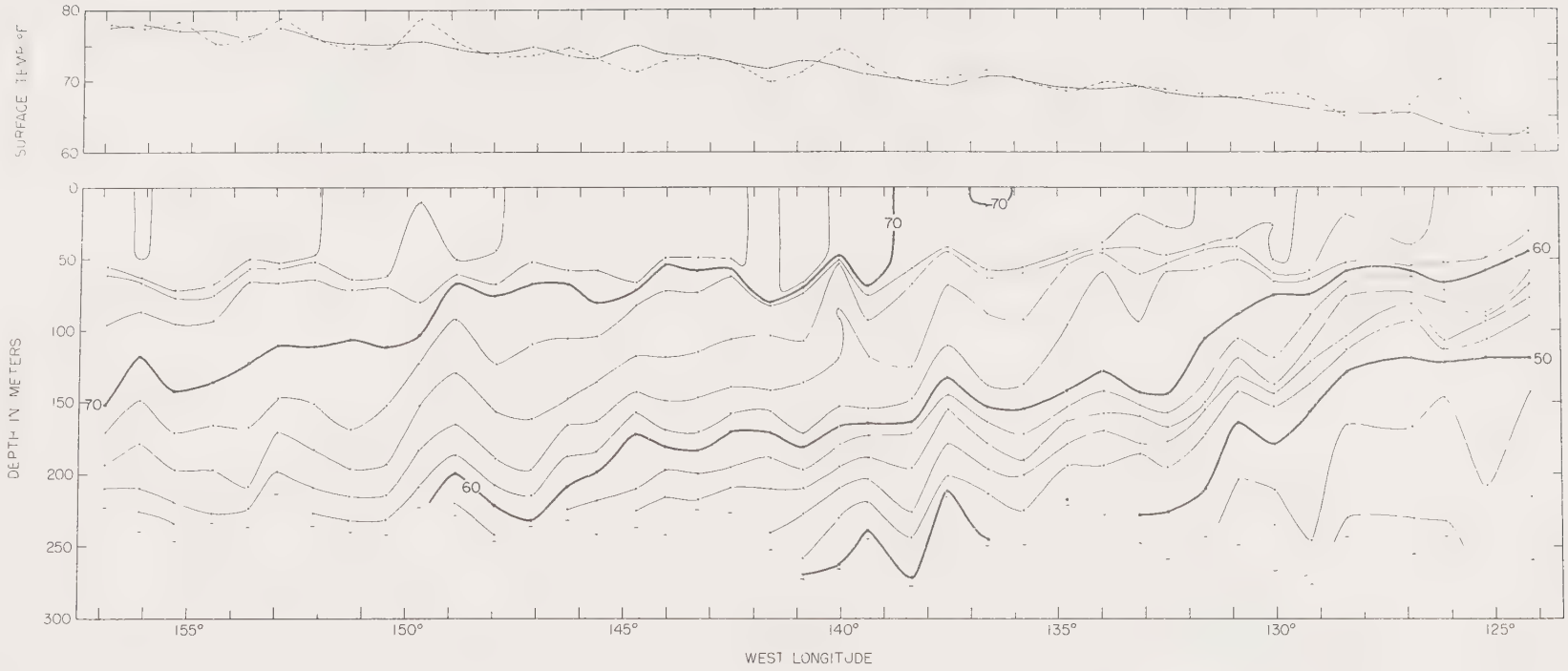


Figure 27.--Temperature sections from BT casts along Section K (see fig. 2), John R. Manning cruise 36 (NEPAS), June 11-August 20, 1957. Upper panel air (dotted) and sea surface (solid) temperatures. Lower panel temperatures from BT slides. Dashes indicate the depth of casts.

Figure 28.--Sea surface temperature in °F. in the NEPAS area based on observations from Hugh M. Smith cruise 40, July 1-September 5, 1957, John R. Manning cruise 36, June 11-August 20, 1957, and the charter vessels, July 22-August 1, 1957.

Figure 29.--Surface salinity in ‰ in the NEPAS area based on observations from Hugh M. Smith cruise 40, July 1-September 5, 1957, and John R. Manning cruise 36, June 11-August 20, 1957. Dots indicate observed values. Dashed lines indicate interpolated contours.

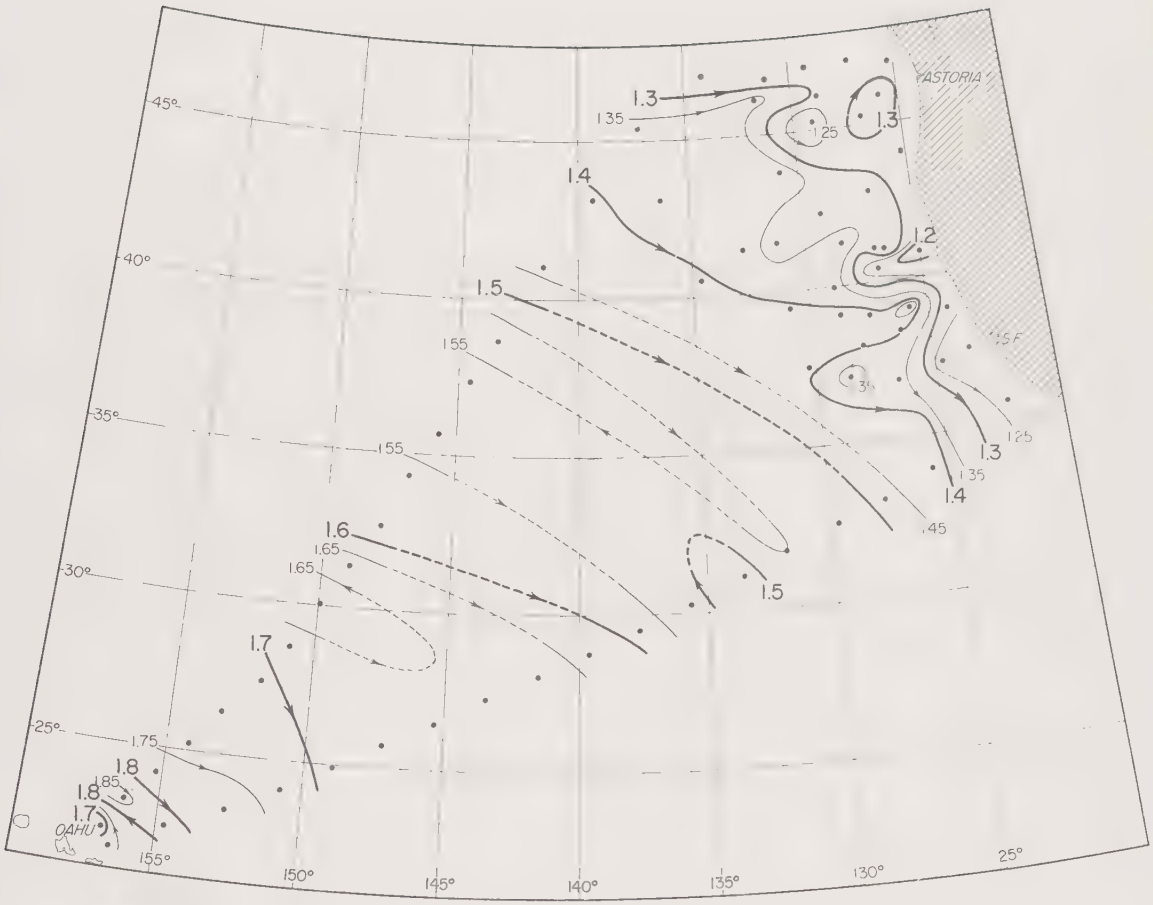


Figure 30.--Anomaly of geopotential topography of the sea surface relative to the 1,000-db. surface, Hugh M. Smith cruise 40 (NEPAS), July 1-September 5, 1957. Dots indicate station positions.

Table 1.--NEPAS charter vessel data

Name	Owner[1/]	Home port	Observer	Organization
Allen Cody	Hunter and Foland (L. L. Newton, operator)	Fields Landing, California	Howard O. Yoshida	Honolulu Biological Laboratory
Flicker	Gus Wagner	Newport, Oregon	George Miller	Oregon Fish. Commission
Gypsy	Jim Lyons	Seattle, Washington	William Stickley	Washington Department of Fisheries
Lancing	Oscar Knudsen	Seattle, Washington	None	-
Lynn	Les Withee (Josh Bufton, operator)	Garibaldi, Oregon	None	-
Lynn Ann	Herman Foland	Fields Landing, California	Thomas S. Hida	Honolulu Biological Laboratory
Luwella	O. James Bardeau	San Diego, California	Tom Jow	California Department of Fish and Game
Rowland R.Sr.	William R. Roland	El Cerrito, California	None	-
Tuna Clipper	Erling Kolnes (Floyd M. Rhoades, operator)	San Pedro, California	Robert L. Caldwell	California Department of Fish and Game

[1/] Except where operators are indicated, vessels were operated by the owners.

Table 2.--Positions and summary of observations taken at Hugh M. Smith cruise 40 (NEPAS) stations, July 1 - September 5, 1957 1/

Station No.	Time GCT	Date 1957	Position		Hydro. cast	P	SD (m)	WC	UWB No.
			Latitude North	Longitude West					
1	1818	7/2	22°21'	156°55'	x	-	-	-	-
2	2330	7/2	22°37'	156°43'	-	15	-	-	-
3	0620	7/3	23°12'	156°16'	-	30	-	-	-
4	1820	7/3	24°17'	155°11'	x	-	24	2	-
5	2339	7/3	24°40'	154°47'	-	15	-	-	-
6	0630	7/4	25°15'	154°06'	x	30	-	-	-
7	1814	7/4	26°20'	153°01'	x	-	26	3	-
8	2319	7/4	26°45'	152°35'	-	15	-	-	-
9	0620	7/5	27°25'	151°50'	x	30	-	-	-
10	1810	7/5	28°41'	150°54'	x	-	-	-	-
11	2317	7/5	29°11'	150°32'	-	15	-	-	-
12	0615	7/6	30°02'	149°56'	x	30	-	-	-
13	1720	7/6	31°16'	148°54'	x	-	33	0-1	-
14	2209	7/6	31°47'	148°31'	-	15	-	-	-
15	0510	7/7	32°44'	147°49'	x	-	-	-	-
16	0705	7/7	32°51'	147°45'	-	30	-	-	-
17	1714	7/7	34°12'	146°44'	x	-	35	1	-
18	2214	7/7	34°46'	146°19'	-	15	-	-	-
19	0512	7/8	35°46'	145°38'	x	-	-	-	-
20	0704	7/8	35°52'	145°33'	-	30	-	-	-
21	1712	7/8	37°17'	144°28'	x	-	30	3	-
22	2214	7/8	37°53'	144°00'	-	15	-	-	-
23	0552	7/9	38°47'	143°20'	x	30	-	-	-
24	2200	7/9	40°27'	142°06'	-	15	16-1/2	3	-
25	0543	7/10	41°03'	141°30'	x	30	-	-	-
26	1053	7/10	41°32'	141°00'	-	15	-	-	-
27	2202	7/10	42°24'	140°06'	-	15	16	4	-
28	0545	7/11	43°09'	139°25'	x	30	-	-	-
29	1222	7/11	43°52'	138°44'	-	15	-	-	-
30	2256	7/11	44°43'	137°53'	-	15	22	3	-
31	0545	7/12	45°24'	137°12'	x	30	-	-	-
32	2333	7/12	43°46'	136°24'	-	15	-	-	-
33	0525	7/13	43°03'	136°10'	x	30	-	-	-
34	2154	7/13	41°10'	135°20'	-	15	-	-	-
35	0615	7/14	40°33'	134°37'	x	30	-	-	-
36	2121	7/14	40°43'	133°18'	-	15	27	2	-
37	0505	7/15	41°29'	132°46'	x	30	-	-	-
38	2146	7/15	43°04'	131°34'	-	15	19	2	-
39	0334	7/16	43°33'	131°09'	-	15	-	-	-
40	0501	7/16	43°45'	130°59'	x	30	-	-	-
41	1911	7/16	44°49'	130°02'	-	15	19	3	-
42	2123	7/16	44°57'	130°00'	-	15	17	4	-
43	0458	7/17	45°12'	129°03'	x	30	-	-	-

1/ P - Surface plankton haul - duration in minutes.
SD - Secchi disc observation in meters
WC - Water color in the Forel scale.
UWB - University of Washington boron samples - number.

Table 2.--Positions and summary of observations taken at Hugh M. Smith cruise 40 (NEPAS) stations, July 1 - September 5, 1957 (cont'd)

Station No.	Time GCT	Date 1957	Position		Hydro. cast	P	SD (m)	WC	UWB No.
			Latitude North	Longitude West					
44	1330	7/17	45°26'	128°06'	-	15	-	-	-
45	2115	7/17	45°41'	127°04'	-	15	-	-	-
46	2312	7/17	45°43'	126°48'	-	15	-	-	-
47	0455	7/18	45°54'	125°57'	x	30	-	-	-
Astoria									
48	1335	7/22	46°54'	125°15'	x	-	-	-	-
49	2128	7/22	47°01'	126°18'	-	15	20	4	-
50	0018	7/23	47°02'	126°35'	-	15	18	4	-
51	0252	7/23	47°02'	126°53'	-	15	-	-	-
52	0534	7/23	47°02'	127°12'	x	30	-	-	-
53	1313	7/23	47°00'	127°07'	-	15	-	-	-
54	1529	7/23	47°00'	127°18'	-	15	17	5	-
55	2007	7/23	47°01'	127°48'	-	15	14	4	-
56	2150	7/23	47°01'	127°48'	-	15	11-1/2	4+	-
57	0505	7/24	47°00'	129°08'	x	30	-	-	-
58	2117	7/24	46°47'	130°22'	-	15	11	3+	-
59	0115	7/25	46°44'	130°49'	-	30	12	4+	-
60	0542	7/25	46°45'	131°04'	x	30	-	-	-
61	0722	7/25	46°46'	130°49'	-	30	-	-	-
62	2124	7/25	46°48'	132°07'	-	15	14	4	-
63	0122	7/26	46°51'	132°46'	-	15	-	-	-
64	0539	7/26	46°55'	133°23'	-	30	-	-	-
65	1210	7/26	46°58'	134°03'	x	-	-	-	-
66	0515	7/27	46°06'	131°40'	x	-	-	-	-
67	2118	7/27	46°06'	130°04'	-	15	16	4	-
68	2325	7/27	46°05'	129°48'	-	15	14	4	-
69	0505	7/28	46°01'	128°55'	x	30	-	-	-
70	2116	7/28	45°58'	127°29'	-	15	12	4+	-
71	0442	7/29	45°15'	126°53'	x	30	-	-	-
72	2147	7/29	44°20'	125°54'	-	15	17	3	-
73	0430	7/30	44°00'	125°07'	x	30	-	-	-
74	2119	7/30	43°18'	126°00'	-	15	18	5	-
75	0445	7/31	42°56'	126°59'	x	15	-	-	-
76	1417	7/31	42°47'	127°15'	-	15	-	-	-
77	1926	7/31	42°36'	127°53'	-	15	-	-	-
78	2111	7/31	42°32'	128°05'	-	15	26	4	-
79	0438	8/1	42°16'	129°05'	x	15	-	-	-
80	2117	8/1	41°48'	130°13'	-	15	23-1/2	2	-
81	0457	8/2	41°33'	131°06'	x	15	-	-	-
82	2119	8/2	41°26'	129°26'	-	15	28	3	-
83	0023	8/3	41°23'	129°03'	-	15	24	2	-
84	0440	8/3	41°18'	128°25'	x	15	-	-	-
85	2135	8/3	41°04'	126°56'	x	15	17	4	-
86	0045	8/4	41°02'	126°41'	x	-	17	4	-
87	0542	8/4	40°58'	126°01'	-	15	-	-	-
88	1740	8/4	40°48'	125°01'	x	15	12	5	-
89	2117	8/4	40°40'	125°19'	-	15	-	-	-
90	2257	8/4	40°37'	125°30'	-	15	-	-	-

Table 2.--Positions and summary of observations taken at Hugh M. Smith cruise 40 (NEPAS) stations, July 1 - September 5, 1957 (cont'd)

Station No.	Time GCT	Date 1957	Position		Hydro. cast	P	SD (m)	WC	UWB No.
			Latitude North	Longitude West					
91	0003	8/5	40°34'	125°36'	-	15	-	-	-
92	0517	8/5	40°26'	126°16'	-	15	-	-	-
93	1653	8/5	40°18'	126°54'	x	-	19	3	-
94	2113	8/5	40°12'	127°23'	-	15	15	4	-
95	0534	8/6	40°04'	128°20'	-	15	-	-	-
96	0800	8/6	39°51'	128°57'	x	-	23	2	-
97	2120	8/6	39°45'	129°29'	-	15	27	2	-
98	0532	8/7	39°32'	130°42'	-	15	-	-	-
99	1217	8/7	39°29'	130°58'	x	-	-	-	13
100	2121	8/7	39°17'	129°45'	-	15	25	2	-
101	0425	8/8	39°08'	128°40'	x	15	-	-	-
102	1338	8/8	39°02'	128°21'	-	15	-	-	-
103	1746	8/8	38°59'	127°56'	-	15	-	-	-
104	2235	8/8	39°00'	127°33'	x	15	25	1	-
105	0608	8/9	39°03'	127°01'	-	15	-	-	-
106	2039	8/9	39°11'	125°37'	x	15	21	2	-
107	2308	8/9	39°09'	125°26'	-	15	-	-	-
108	0413	8/10	39°00'	124°35'	-	15	-	-	-
109	0523	8/10	38°57'	124°24'	-	15	-	-	-
110	1210	8/10	38°54'	124°21'	x	-	-	-	-
111	1650	8/10	38°43'	124°47'	-	15	-	-	-
112	1926	8/10	38°37'	125°01'	-	15	20	4	-
113	0046	8/10	38°31'	125°31'	-	15	20	3	-
114	0328	8/11	38°26'	126°01'	-	15	-	-	-
115	0415	8/11	38°26'	126°04'	x	-	-	-	-
116	1749	8/11	39°10'	127°26'	-	15	29	2	-
117	2105	8/11	38°03'	127°51'	x	15	25	2	-
118	0353	8/12	37°53'	128°34'	-	15	-	-	-
119	1305	8/12	37°29'	130°12'	x	15	-	-	-
120	2115	8/12	37°19'	129°20'	-	15	31	1	-
121	2324	8/12	37°16'	129°08'	-	15	-	-	-
122	0202	8/13	37°11'	128°46'	-	15	-	-	-
123	0413	8/13	37°09'	128°31'	x	15	-	-	-
124	1522	8/13	37°02'	128°13'	-	15	-	-	-
125	2110	8/13	37°01'	127°30'	-	15	-	-	-
126	0407	8/14	36°52'	126°35'	x	-	-	-	-
127	2116	8/14	37°01'	125°26'	-	15	-	-	-
128	0125	8/15	37°06'	125°04'	-	15	-	-	-
129	0408	8/15	37°12'	124°41'	x	-	-	-	-
130	1012	8/15	37°26'	123°53'	-	15	-	-	-
131	1213	8/15	37°31'	123°32'	x	-	-	-	-
Oakland									
132	0546	8/26	36°43'	122°25'	-	15	-	-	-
133	1205	8/27	35°39'	122°13'	x	-	-	-	-
134	2113	8/27	35°14'	123°13'	-	15	-	-	-
135	0532	8/27	34°29'	124°17'	-	15	-	-	-
136	1305	8/28	33°54'	125°36'	x	-	-	-	-
137	2115	8/28	33°37'	126°30'	-	15	27	1+	-
138	0405	8/28	33°08'	127°47'	x	30	-	-	-

Table 2.--Positions and summary of observations taken at Hugh M. Smith cruise 40 (NEPAS) stations, July 1- September 5, 1957 (cont'd)

Station No.	Time GCT	Date 1957	Position		Hydro. cast	P	SD (m)	WC	UWB No.
			Latitude North	Longitude West					
139	1605	8/29	32°26'	129°43'	x	-	42	-	-
140	2104	8/29	32°10'	130°28'	-	15	-	-	-
141	0402	8/30	31°43'	131°44'	x	30	-	-	-
142	1605	8/30	31°01'	133°36'	x	-	36	1	-
143	2110	8/30	30°44'	134°20'	-	15	-	-	-
144	0405	8/31	30°14'	135°33'	x	30	-	-	-
145	1704	8/31	29°29'	137°30'	x	-	45	1	-
146	2206	8/31	29°12'	138°23'	-	15	-	-	-
147	0500	9/1	28°45'	139°36'	x	30	-	-	13
148	1706	9/1	28°01'	141°30'	x	-	36	1	-
149	2211	9/1	27°43'	142°13'	-	15	-	-	-
150	0501	9/2	27°16'	143°27'	x	30	-	-	-
151	1704	9/2	26°28'	145°20'	x	-	35	0-1	-
152	1205	9/2	26°10'	146°01'	-	15	-	-	-
153	0501	9/3	25°41'	147°10'	x	30	-	-	-
154	1706	9/3	24°55'	148°00'	x	-	36	1	-
155	1206	9/3	24°38'	149°40'	-	15	-	-	-
156	0601	9/4	24°07'	150°51'	x	30	-	-	13
157	1807	9/4	23°21'	152°41'	x	-	36	1-2	-
158	2308	9/4	23°04'	153°23'	-	15	-	-	-
159	0602	9/5	22°33'	154°39'	x	30	-	-	-
160	1807	9/5	21°45'	156°30'	x	-	31	1	-

Table 3.--Summary of observations at bathythermograph lowerings, Hugh M. Smith cruise 40 (NEPAS)(for coded values see H. O. Pub. 606-c)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Barometer, mb.	Weather	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
1	1810	7/2	22°21'N	156°55'W	77.2	080	21	77.7	71.3	1021	02	6	5	8	4	XX	X	-	-
2	2040	7/2	22°21'N	156°55'W	76.7	070	19	78.0	71.2	1021	60	6	5	8	4	XX	X	-	-
3	0010	7/3	22°38'N	156°42'W	76.7	020	19	77.9	71.9	1020	02	6	4	8	4	XX	X	-	-
4	0300	7/3	22°54'N	156°30'W	76.7	040	20	77.0	71.2	1019	01	5,8	2	8	4	040	3	-	-
5	0610	7/3	23°12'N	156°16'W	76.3	060	22	76.8	70.3	1021	03	6,8	7	8	3	XX	X	-	-
6	0730	7/3	23°12'N	156°16'W	76.3	060	22	76.8	70.3	1021	03	6,8	7	8	3	XX	X	-	-
7	1130	7/3	23°34'N	155°53'W	78.0	070	18	75.5	72.1	1019	01	6	7	8	3	XX	X	-	-
8	1505	7/3	23°57'N	155°30'W	76.2	020	15	75.5	71.8	1019	02	8	3	8	3	XX	X	-	-
9	1805	7/3	24°17'N	155°11'W	76.8	060	17	77.2	72.8	1019	02	8	2	9	2	XX	X	-	-
10	1930	7/3	24°17'N	155°11'W	76.7	060	17	77.2	72.8	1019	02	8	2	9	2	060	1	-	-
11	2315	7/3	24°40'N	154°47'W	76.0	060	14	78.8	72.2	1019	02	3,8	3	9	2	060	1	-	-
12	0305	7/4	24°58'N	154°25'W	77.2	080	12	79.8	72.0	1019	02	8,5	2	9	2	080	1	-	-
13	0605	7/4	25°15'N	154°06'W	75.8	080	16	76.7	71.3	1019	02	8	2	9	2	060	1	-	-
14	0735	7/4	25°15'N	154°06'W	75.9	080	11	76.6	71.3	1019	02	8	2	9	2	XX	X	-	-
15	1130	7/4	25°37'N	153°44'W	75.8	090	15	75.4	70.6	1021	02	X	X	9	2	XX	X	-	-
16	1500	7/4	26°00'N	153°21'W	75.8	100	10	72.7	70.1	1021	62	8	7	7	2	050	1	-	-
17	1800	7/4	26°20'N	153°01'W	74.8	070	11	75.3	70.8	1023	02	8	2	9	2	070	1	-	-
18	1910	7/4	26°20'N	153°01'W	75.0	070	13	76.4	70.8	1023	02	5,8	2	9	2	080	1	-	-
19	2305	7/4	26°45'N	152°35'W	75.0	080	15	79.0	72.0	1023	02	5,8	2	9	2	080	1	35.52	-
20	0350	7/5	27°11'N	152°04'W	74.9	060	16	77.7	71.9	1023	03	5,8	4	9	2	070	1	35.39	-
21	0605	7/5	27°25'N	151°50'W	75.9	090	15	76.0	71.0	1024	03	6	6	9	2	070	1	-	-
22	0715	7/5	27°25'N	151°50'W	75.9	070	14	75.3	70.2	1025	02	6	6	9	2	XX	X	-	-
23	1130	7/5	27°53'N	151°30'W	75.1	080	15	73.9	69.2	1025	50	X	X	6	2	XX	X	35.30	-
24	1500	7/5	28°18'N	151°10'W	74.2	040	10	73.3	68.0	1026	00	4,8	6	9	2	050	1	35.28	-
25	1805	7/5	28°41'N	150°54'W	74.4	070	18	73.8	69.6	1026	02	2	8	9	3	060	2	-	-
26	1910	7/5	28°41'N	150°54'W	74.6	070	18	73.8	69.6	1026	02	2	8	9	3	060	3	-	-
27	2305	7/5	29°11'N	150°32'W	74.2	080	14	76.9	70.4	1026	02	1	8	9	2	080	1	35.43	-
28	0300	7/6	29°38'N	150°13'W	74.2	070	17	73.4	67.5	1026	03	4,7,8	8	9	2	070	1	35.43	-
29	0610	7/6	30°02'N	149°56'W	73.8	030	13	72.8	67.2	1026	02	6,8	8	9	2	070	1	-	-
30	0715	7/6	30°02'N	149°56'W	73.6	040	14	71.8	66.8	1026	50	X	X	8	2	XX	X	-	-
31	1130	7/6	30°32'N	149°31'W	72.9	070	20	71.8	67.6	1025	00	X	X	8	2	XX	X	35.25	-
32	1505	7/6	31°00'N	149°08'W	XXX	070	13	72.2	66.4	1026	03	4,0	7	8	2	070	1	35.34	-
33	1710	7/6	31°16'N	148°54'W	72.7	030	13	72.5	65.3	1026	02	8	8	9	2	030	1	-	-
34	1820	7/6	31°16'N	148°54'W	73.7	010	13	72.1	65.7	1026	02	8	8	9	2	020	1	-	-
35	2200	7/6	31°47'N	148°31'W	73.6	050	12	75.6	69.2	1027	02	4,8	7	9	2	030	1	34.97	-

Table 3.--Summary of observations at bathythermograph lowerings, Hugh M. Smith cruise 40 (NEPAS)(for coded values see H. O. Pub. 606-c)(cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Barometer, mb.	Weather	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
36	0205	7/7	32°18'N	148°08'W	73.3	040	13	74.8	68.5	1026	60	4,8	7	9	2	050	1	-	-
37	0510	7/7	32°44'N	147°49'W	73.2	080	07	72.7	68.3	1026	02	8	2	9	2	050	1	-	-
38	0605	7/7	32°44'N	147°49'W	73.0	080	07	72.7	68.3	1026	02	8	2	9	2	050	1	-	-
39	1105	7/7	33°20'N	147°23'W	71.6	060	07	70.2	65.6	1026	01	X	X	8	2	XX	1	34.83	-
40	1400	7/7	33°46'N	147°04'W	71.8	020	06	69.0	65.1	1025	02	8	1	9	1	080	1	34.69	-
41	1710	7/7	34°12'N	146°44'W	71.0	020	08	70.0	65.8	1025	02	8	1	9	1	XX	1	-	-
42	1810	7/7	34°12'N	146°44'W	70.9	020	08	70.0	65.8	1025	02	8	1	9	1	030	1	-	-
43	2205	7/7	34°46'N	146°19'W	75.4	030	03	73.6	66.0	1026	02	5,8	1	9	1	010	1	34.42	-
44	0205	7/8	35°21'N	145°55'W	74.1	250	05	73.8	67.2	1025	01	8	1	9	1	140	1	34.47	-
45	0500	7/8	35°46'N	145°38'W	71.9	260	07	71.9	67.5	1025	03	8	2	9	1	XX	X	-	-
46	0605	7/8	35°46'N	145°38'W	71.3	250	09	71.3	66.8	1025	03	8	2	9	1	XX	X	-	0.40
47	1105	7/8	36°23'N	145°10'W	69.0	260	15	69.8	67.7	1024	02	8	2	9	2	XX	X	34.23	-
48	1400	7/8	36°50'N	144°49'W	68.6	250	09	69.2	66.0	1023	01	5,6	7	8	2	300	1	33.87	-
49	1705	7/8	37°17'N	144°28'W	68.3	270	10	68.7	66.6	1023	02	2,8	1	9	2	290	1	-	-
50	1805	7/8	37°17'N	144°28'W	68.3	270	10	68.7	66.6	1023	02	2,8	1	9	2	290	1	-	-
51	2205	7/8	37°53'N	144°00'W	67.2	210	13	72.1	69.2	1022	03	2,8	2	9	2	300	1	33.75	-
52	0200	7/9	38°27'N	143°35'W	66.4	230	16	69.6	67.1	1021	02	3,6	7	8	2	270	1	33.69	-
53	0510	7/9	38°47'N	143°20'W	66.0	240	20	68.1	67.0	1019	03	4,8	8	8	3	260	2	-	0.37
53A	0650	7/9	38°47'N	143°20'W	66.0	230	22	67.8	66.3	1019	63	8	8	8	3	260	2	-	-
54	1100	7/9	39°18'N	142°59'W	64.5	260	23	66.8	65.2	1016	63	X	8	6	3	270	3	33.66	-
55	1400	7/9	39°44'N	142°40'W	63.4	350	18	64.5	63.0	1015	02	8,0	8	7	3	250	3	33.49	-
56	1715	7/9	40°01'N	142°28'W	63.7	010	14	64.2	62.7	1015	02	8,6,0	8	7	3	250	3	33.21	-
57	1915	7/9	40°13'N	142°18'W	63.3	250	10	63.9	62.3	1015	02	8,0	7	9	3	240	3	33.28	-
58	2130	7/9	40°26'N	142°08'W	63.1	250	10	64.0	62.2	1015	02	0,6,8	8	9	3	240	3	33.21	0.10
59	0000	7/10	40°35'N	141°57'W	62.1	030	25	61.7	58.9	1017	15	0,6	8	7	3	010	3	33.21	0.34
60	0235	7/10	40°48'N	141°45'W	62.5	030	24	60.8	57.8	1017	02	8,0,6	8	7	3	030	3	33.19	0.16
61	0535	7/10	41°03'N	141°30'W	62.4	020	21	62.3	60.0	1020	00	X	7	8	4	020	3	-	0.36
62	0645	7/10	41°03'N	141°30'W	62.4	020	21	62.3	60.0	1020	00	X	7	8	4	020	3	-	-
63	0830	7/10	41°10'N	141°22'W	61.5	020	18	59.6	55.9	1021	02	X	7	8	4	020	3	33.17	-
64	1005	7/10	41°26'N	141°05'W	60.5	030	15	58.0	52.3	1021	01	8	2	7	3	XX	X	33.01	-
65	1200	7/10	41°38'N	140°54'W	60.2	000	12	57.5	52.2	1021	01	8	2	7	3	XX	X	32.97	-
66	1400	7/10	41°49'N	140°42'W	59.4	340	13	57.7	54.5	1021	03	4,8	4	9	3	010	1	32.97	0.20
67	1635	7/10	42°01'N	140°31'W	59.0	030	14	57.7	54.8	1022	03	6,8	6	9	3	010	1	33.01	0.35
68	1900	7/10	42°12'N	140°19'W	59.0	350	14	57.7	53.2	1023	02	6,8	7	9	3	010	1	32.94	-
69	2135	7/10	42°23'N	140°07'W	59.9	350	05	59.0	56.0	1023	01	6,8	6	9	2	010	1	32.95	0.31

Table 3.--Summary of observations at bathythermograph lowerings, Hugh M. Smith cruise 40 (NEPAS)(for coded values see H. O. Pub. 606-c)(cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Barometer, mb.	Weather	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
70	0000	7/11	42°35'N	139°56'W	59.5	350	11	58.6	56.0	1023	03	6,8,0	7	9	2	010	1	32.84	0.38
71	0235	7/11	42°49'N	139°44'W	60.3	320	09	57.6	57.2	1022	02	6	7	9	2	010	1	32.94	0.22
72	0535	7/11	43°09'N	139°25'W	59.2	280	10	57.5	53.6	1023	03	6	8	9	2	330	1	-	0.41
73	0645	7/11	43°09'N	139°25'W	59.0	280	10	57.5	53.6	1023	03	6	8	9	2	330	1	-	-
74	0830	7/11	43°21'N	139°15'W	58.7	270	10	57.8	55.8	1022	03	6,8	8	7	2	XX	1	32.86	0.24
75	1000	7/11	43°32'N	139°03'W	58.4	260	10	57.0	53.9	1021	02	6,8	8	8	3	XX	X	32.90	0.30
76	1210	7/11	43°49'N	138°47'W	57.8	250	11	57.7	53.5	1021	02	6,8	8	8	3	XX	X	32.88	0.62
77	1400	7/11	44°02'N	138°33'W	57.8	220	07	56.8	54.0	1020	02	6,8	8	9	2	310	1	32.75	0.34
78	1630	7/11	44°16'N	138°20'W	56.9	220	10	57.0	54.5	1020	02	6,8	8	9	3	310	1	32.74	0.39
79	1900	7/11	44°29'N	138°07'W	57.5	230	10	59.0	53.0	1018	02	6,8	8	9	3	310	1	32.72	0.32
80	2135	7/11	44°42'N	137°54'W	57.6	220	14	60.1	56.3	1021	02	6,8	8	9	2	310	1	32.66	0.55
81	0000	7/12	44°54'N	137°42'W	57.0	160	14	60.1	57.2	1020	02	6,8	8	9	2	350	2	32.74	0.44
82	0230	7/12	45°07'N	137°29'W	57.0	130	11	58.0	57.9	1015	50	6,8	8	8	2	340	2	32.68	0.57
83	0535	7/12	45°24'N	137°12'W	56.9	150	14	56.9	56.4	1013	50	6,8	8	8	2	340	2	-	0.59
84	0650	7/12	45°24'N	137°12'W	56.8	150	14	56.9	56.9	1013	50	6,8	8	8	2	340	2	-	-
85	0845	7/12	45°15'N	137°07'W	56.9	130	23	57.4	57.3	1012	50	X	X	8	3	XX	X	32.66	0.47
86	1000	7/12	45°03'N	137°01'W	56.8	130	22	57.3	57.2	1009	61	X	X	6	3	XX	X	32.68	0.43
87	1200	7/12	44°48'N	136°53'W	57.0	080	26	57.0	57.0	1006	63	X	X	6	4	XX	X	32.72	0.42
88	1705	7/12	44°22'N	136°38'W	57.3	090	26	57.8	57.7	1002	63	6,8	8	6	5	150	3	32.61	0.49
89	2010	7/12	44°06'N	136°31'W	57.7	250	13	60.8	59.0	XXX	01	6,8	7	9	4	080	3	32.86	0.40
90	2300	7/12	43°48'N	136°24'W	58.7	240	11	59.1	58.5	1001	42	6,8	8	7	3	180	3	32.77	0.37
91	0235	7/13	43°24'N	136°17'W	59.5	150	07	61.8	59.0	1002	07	6,8	7	7	3	160	3	32.77	0.37
92	0515	7/13	43°03'N	136°10'W	59.3	310	06	61.3	58.9	1002	03	6,8	8	9	3	XX	X	-	NS
93	0620	7/13	43°03'N	136°10'W	59.3	310	06	61.3	58.9	1002	03	6,8	8	9	3	XX	X	-	-
94	0830	7/13	42°45'N	136°02'W	59.5	300	06	62.5	60.8	1003	02	6,8	8	8	3	XX	X	32.88	0.37
95	1000	7/13	42°30'N	135°56'W	59.7	290	10	62.5	59.0	1004	02	6,8	8	7	3	XX	X	32.88	0.49
96	1200	7/13	42°09'N	135°48'W	60.2	290	10	61.2	58.2	1004	02	6,8	8	7	3	XX	1	32.88	0.35
97	1405	7/13	41°52'N	135°40'W	60.3	320	22	61.0	57.8	1005	02	6,8	8	8	4	310	4	32.88	0.37
98	1645	7/13	41°37'N	135°33'W	60.9	320	21	61.2	58.0	1007	50	6,8	8	8	4	310	4	32.94	0.76
99	1900	7/13	41°23'N	135°28'W	61.6	320	25	61.2	57.4	1010	02	6,8	8	9	4	310	4	33.01	0.36
100	2130	7/13	41°10'N	135°20'W	62.3	310	19	60.8	58.2	1011	01	6,8	5	9	4	310	4	33.22	0.37
101	0000	7/14	40°59'N	135°08'W	62.7	340	21	62.8	58.0	1012	01	6,8	4	9	4	330	4	33.26	0.33
102	0230	7/14	40°47'N	134°53'W	62.8	310	21	63.2	58.7	1012	02	8	4	9	4	310	4	33.30	0.27
103	0510	7/14	40°34'N	134°39'W	62.7	290	17	61.8	59.2	1016	02	8	4	9	4	310	4	-	0.50
104	0720	7/14	40°33'N	134°37'W	62.7	290	17	61.8	59.2	1016	02	8	4	9	4	310	4	-	-

Table 3.-- Summary of observations at bathythermograph lowerings, Hugh M. Smith cruise 40 (NEPAS)(for coded values see H. O. Pub. 606-c)(cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Barometer, mb.	Weather	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
105	0900	7/14	40°23'N	134°26'W	62.7	270	08	63.2	60.0	1017	02	X	X	9	4	XX	4	33.26	0.35
106	1100	7/14	40°08'N	134°10'W	62.9	300	06	64.2	59.8	1017	02	6,8	2	9	3	XX	X	33.21	0.36
107	1300	7/14	39°58'N	133°59'W	62.8	310	19	62.4	57.5	1019	02	6,8	7	9	3	320	1	33.19	0.43
108	1530	7/14	40°12'N	133°45'W	62.9	300	15	62.2	57.0	1020	16	6,8	8	8	3	320	2	33.21	-
109	1830	7/14	40°29'N	133°30'W	62.6	320	09	62.1	59.8	1022	03	6,8	8	9	3	080	1	33.08	0.30
110	2100	7/14	40°43'N	133°18'W	62.7	330	15	62.5	58.2	1023	02	6,8	8	9	3	070	2	33.06	0.43
111	2330	7/14	40°55'N	133°10'W	62.3	310	09	62.3	56.6	1024	01	6,8	6	9	3	310	2	33.04	0.47
112	0200	7/15	41°12'N	132°58'W	62.2	320	12	62.0	58.0	1024	02	6,8	7	9	3	260	1	33.01	0.35
113	0500	7/15	41°29'N	132°46'W	61.8	280	10	60.0	58.8	1025	02	6,8	7	9	3	270	2	-	0.49
114	0605	7/15	41°29'N	132°46'W	61.7	280	10	60.0	58.8	1025	02	6,8	7	9	3	270	2	-	-
115	0800	7/15	41°40'N	132°38'W	61.3	310	12	60.8	58.3	1026	02	X	X	9	3	XX	X	33.01	0.11
116	1000	7/15	41°57'N	132°27'W	60.8	300	15	61.1	57.7	1026	00	X	X	9	3	XX	X	32.94	0.49
117	1200	7/15	42°14'N	132°15'W	61.2	310	19	60.6	59.2	1026	00	X	X	9	3	XX	X	32.88	0.49
118	1400	7/15	42°27'N	132°05'W	60.8	330	17	60.2	56.0	1026	02	6,8	8	9	3	270	1	33.68	0.52
119	1630	7/15	42°41'N	131°54'W	60.9	320	12	59.7	55.1	1027	50	6,8	8	8	3	320	2	32.77	0.49
120	1835	7/15	42°52'N	131°44'W	60.8	290	09	58.7	55.4	1027	02	6,8	8	9	2	310	2	32.74	0.77
121	2113	7/15	43°05'N	131°33'W	61.0	330	17	59.6	57.0	1028	01	6,8	5	9	2	310	2	32.83	0.63
122	2330	7/15	43°12'N	131°27'W	60.5	330	18	60.0	58.1	1027	02	6,8	5	9	3	340	1	32.74	0.49
123	0200	7/16	43°25'N	131°16'W	60.5	330	16	59.8	58.0	1027	01	6,8	4	9	3	340	2	32.83	0.40
124	0450	7/16	43°45'N	130°59'W	59.8	350	16	59.4	58.2	1028	02	6,8	4	9	3	XX	X	-	0.57
125	0600	7/16	43°45'N	130°59'W	59.8	350	16	59.4	58.2	1028	02	6,8	4	9	3	XX	X	-	-
126	0900	7/16	44°00'N	130°47'W	59.6	310	20	58.8	56.0	1028	02	6,8	4	9	3	XX	X	32.81	-
127	1200	7/16	44°16'N	130°35'W	58.9	350	16	57.9	56.1	1028	01	8	3	9	3	XX	X	32.75	0.41
128	1400	7/16	44°28'N	130°26'W	59.0	350	19	57.9	56.9	1028	02	8	3	9	3	350	1	32.74	0.52
129	1630	7/16	44°38'N	130°13'W	58.8	350	19	58.2	57.3	1029	02	6,8	5	9	3	360	1	32.74	0.55
130	1830	7/16	44°46'N	130°06'W	58.6	360	20	58.9	57.1	1029	03	4,6,8	7	9	3	360	1	32.72	0.51
131	2100	7/16	44°56'N	130°01'W	58.8	000	20	59.3	57.3	1030	03	4,6,8	6	9	3	300	1	32.68	0.43
132	2330	7/16	45°02'N	129°48'W	58.8	290	26	59.3	56.4	1029	01	4,6,8	5	9	3	300	1	32.63	0.56
133	0200	7/17	45°06'N	129°27'W	59.2	340	24	59.8	58.1	1028	01	6,8	6	9	3	340	1	32.57	0.50
134	0500	7/17	45°11'N	129°06'W	60.2	320	24	58.8	57.6	1029	02	6,8	6	9	3	340	2	-	0.45
135	0605	7/17	45°12'N	129°03'W	60.1	320	24	58.8	57.6	1029	02	6,8	6	9	3	340	2	-	-
136	0900	7/17	45°17'N	128°42'W	60.1	350	18	59.0	57.3	1028	03	6,8	7	9	3	XX	X	32.38	0.50
137	1200	7/17	45°21'N	128°18'W	61.0	350	18	58.2	57.0	1027	02	6,8	8	9	3	350	1	32.07	0.36
138	1400	7/17	45°27'N	128°02'W	61.2	350	22	58.7	57.1	1026	03	0,8	8	9	3	350	1	31.98	0.39
139	1630	7/17	45°33'N	127°42'W	61.3	320	19	58.8	52.6	1026	02	6,8	8	9	3	350	1	31.71	0.50

Table 3.--Summary of observations at bathythermograph lowerings, Hugh M. Smith cruise 40 (NEPAS)(for coded values see H. O. Pub. 606-c)(cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Baro-meter, mb.	Wea-ther	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
140	1830	7/17	45°37'N	127°26'W	61.3	330	19	59.7	56.4	1025	02	6, 8	7	9	3	350	1	31.67	0.48
141	2105	7/17	45°41'N	127°04'W	60.9	320	21	59.8	56.8	1024	02	6, 8	8	9	3	270	1	31.74	0.40
142	2330	7/17	45°44'N	126°45'W	60.1	340	20	60.2	57.3	1023	01	6, 8	7	9	4	340	3	32.52	0.51
143	0215	7/18	45°47'N	126°21'W	61.2	330	20	60.3	55.8	1022	02	6, 8	8	9	4	340	2	32.36	-
144	0445	7/18	45°54'N	125°58'W	61.7	340	19	60.7	58.3	1021	01	6, 8	4	9	4	320	4	-	0.47
145	0605	7/18	45°54'N	125°57'W	61.7	340	19	60.7	58.3	1021	01	6, 8	4	9	4	320	4	-	-
146	1205	7/18	46°16'N	125°31'W	60.5	320	20	59.9	58.0	1019	01	6, 8	3	9	3	320	4	31.83	0.40
147	1405	7/18	46°15'N	125°12'W	60.9	320	17	60.8	58.3	1019	01	6, 8	2	9	3	320	4	31.64	0.30
148	1630	7/18	46°14'N	124°48'W	60.9	010	21	54.0	57.2	1018	02	6, 8	2	9	3	320	3	31.92	0.41
149	1330	7/22	46°54'N	125°15'W	58.2	320	07	58.5	57.8	1017	02	0	8	8	2	320	1	-	0.52
150	1430	7/22	46°54'N	125°15'W	58.1	320	07	58.5	57.8	1017	02	0	8	8	2	320	1	-	-
151	1630	7/22	46°59'N	125°34'W	60.9	300	04	60.6	59.8	1017	02	0, 6	8	8	2	300	1	31.40	0.34
152	1830	7/22	46°59'N	125°53'W	61.1	210	06	59.4	56.2	1017	02	0, 6	8	8	2	330	1	31.24	0.27
153	2115	7/22	47°01'N	126°18'W	61.5	230	14	62.2	61.2	1017	02	0, 8, 6	6	9	2	310	1	30.97	0.10
154	2330	7/22	47°01'N	126°32'W	61.8	250	13	62.8	60.3	1017	02	0, 8, 6	6	9	2	310	1	31.15	0.30
155	0120	7/23	47°02'N	126°41'W	61.8	260	15	62.5	60.0	1017	01	8, 6	4	9	2	280	1	31.40	-
156	0217	7/23	47°02'N	126°48'W	61.8	260	15	62.2	60.1	1017	03	8, 6	7	9	2	280	1	31.65	0.41
157	0450	7/23	47°02'N	127°08'W	61.2	280	10	60.5	57.2	1019	02	X	X	8	2	280	1	-	-
158	0630	7/23	47°02'N	127°12'W	60.9	260	16	62.3	58.6	1020	02	X	X	9	2	XX	X	-	0.40
159	1240	7/23	47°00'N	127°04'W	60.9	280	05	60.2	59.1	1023	60	0, 1, 6	6	9	2	280	1	30.81	0.30
160	1515	7/23	47°00'N	127°18'W	61.0	280	05	59.5	59.0	1024	01	6, 8	5	9	2	280	1	31.38	0.30
161	1830	7/23	47°00'N	127°24'W	61.2	270	09	62.0	58.8	1025	01	6, 8	3	9	2	270	1	31.44	0.30
162	1950	7/23	47°01'N	127°47'W	61.2	270	05	62.0	58.6	1025	01	6, 8	3	9	2	270	1	31.71	0.33
163	2130	7/23	47°00'N	127°59'W	59.8	270	10	62.8	60.9	1026	02	6, 8	3	9	1	240	1	32.38	0.50
164	2330	7/23	47°00'N	128°13'W	60.3	270	07	61.7	60.2	1026	01	6, 8	2	9	1	250	2	32.45	0.43
165	0210	7/24	47°00'N	128°39'W	59.7	270	08	61.2	59.2	1025	03	6, 8	7	9	1	270	2	32.50	0.52
166	0455	7/24	47°00'N	129°08'W	59.2	270	06	59.0	58.5	1025	02	0, 5	7	9	1	270	2	-	-
167	0600	7/24	47°00'N	129°08'W	59.2	260	07	59.8	58.1	1026	02	0, 5	7	9	1	270	2	-	0.44
168	1245	7/24	47°01'N	129°10'W	58.8	270	07	59.0	56.8	1025	01	6	3	9	1	270	2	32.18	0.43
169	1400	7/24	47°00'N	129°21'W	58.7	270	09	59.7	57.0	1025	01	6	2	9	1	270	2	32.34	0.44
170	1630	7/24	46°55'N	129°43'W	58.7	260	10	59.1	57.9	1025	03	0, 6	8	9	1	290	2	32.34	0.54
171	1830	7/24	46°51'N	130°01'W	58.7	250	10	60.3	59.7	1025	02	0, 6	8	9	1	290	4	32.41	-
172	2100	7/24	46°47'N	130°22'W	59.1	240	11	60.4	59.3	1025	03	0, 3	4	9	1	280	2	32.50	0.35
173	2330	7/24	46°44'N	130°38'W	59.0	240	12	60.0	58.5	1024	02	4, 8	8	9	2	280	2	32.50	0.52
174	0050	7/25	46°43'N	130°49'W	59.1	240	06	61.5	61.0	1023	02	4	8	9	2	XX	X	32.54	0.59

Table 3.--Summary of observations at bathythermograph lowerings, Hugh M. Smith cruise 40 (NEPAS)(for coded values see H. O. Pub. 606-c)(cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Barometer, mb.	Weather	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
175	0055	7/25	46°43'N	130°49'W	59.1	240	06	61.5	61.0	1023	02	4	8	9	2	XX	X	-	-
176	0300	7/25	46°44'N	130°55'W	59.0	220	13	60.2	59.0	1021	02	0, 8	7	9	2	260	2	32.48	0.50
177	0425	7/25	46°45'N	131°04'W	58.9	220	14	59.6	59.0	1021	02	1, 2	8	9	2	260	2	-	0.47
178	0535	7/25	46°45'N	131°04'W	59.0	200	13	61.8	60.2	1020	02	X	X	9	2	XX	X	-	-
179	1300	7/25	46°46'N	131°01'W	58.7	280	19	59.1	58.3	1018	02	0, 6, 8	4	9	3	280	1	32.48	0.50
180	1445	7/25	46°46'N	131°14'W	58.7	330	18	58.0	57.1	1019	03	0, 6, 8	6	9	4	280	3	32.52	0.52
181	1630	7/25	46°46'N	131°28'W	58.3	300	20	59.2	56.5	1020	03	6, 4, 8	6	9	4	280	3	32.48	0.47
182	1830	7/25	46°47'N	131°45'W	58.1	300	20	59.9	57.0	1021	02	4, 6, 8	8	9	3	280	3	32.47	0.51
183	2105	7/25	46°48'N	132°07'W	58.2	290	17	59.6	57.9	1022	01	4, 8	2	9	3	280	3	32.52	0.58
184	2330	7/25	46°50'N	132°27'W	58.5	280	26	59.8	56.2	1022	03	6, 8	6	9	3	280	3	32.57	0.61
185	0200	7/26	46°52'N	132°51'W	57.9	280	24	58.2	56.0	1023	02	0, 1, 4, 8	7	9	3	280	3	32.54	0.60
186	0530	7/26	46°55'N	133°23'W	57.7	280	10	57.8	55.0	1026	02	0, 1, 4, 8	5	9	3	280	3	32.54	0.52
187	0800	7/26	46°56'N	133°37'W	57.4	280	09	58.0	54.8	1022	00	X	X	9	3	XX	X	32.52	0.61
188	1000	7/26	46°56'N	133°50'W	57.4	280	14	57.0	56.4	1022	00	X	X	9	3	XX	X	32.52	0.60
189	1200	7/26	46°58'N	134°02'W	57.3	260	20	55.0	54.2	1022	00	X	X	9	3	XX	X	-	0.51
190	1315	7/26	46°57'N	134°02'W	57.3	260	20	55.0	54.2	1022	63	0, 6	8	9	3	XX	X	-	-
191	1630	7/26	46°48'N	133°34'W	57.8	130	27	59.2	59.0	1019	63	0, 6	8	8	3	050	3	32.59	0.50
192	1830	7/26	46°42'N	133°17'W	57.9	210	18	60.0	59.5	1019	63	0, 6, 8	8	8	3	230	3	32.56	-
193	2100	7/26	46°34'N	132°55'W	58.9	210	17	61.6	61.0	1018	53	0	8	5	4	240	3	32.54	0.44
194	2330	7/26	46°25'N	132°31'W	59.4	240	28	62.1	62.1	1018	52	0	8	5	4	250	3	-	-
195	0230	7/27	46°16'N	132°04'W	58.3	250	20	60.4	60.4	1017	52	0	8	5	4	250	3	32.61	0.64
196	0455	7/27	46°06'N	131°43'W	58.3	250	20	60.2	60.2	1017	53	X	X	5	4	250	4	-	0.57
197	0630	7/27	46°06'N	131°43'W	58.3	250	20	60.2	60.6	1017	53	X	X	5	4	250	4	-	-
198	1400	7/27	46°10'N	131°19'W	58.8	300	16	61.0	61.0	1017	02	0	8	5	3	250	4	32.52	0.68
199	1640	7/27	46°09'N	130°51'W	59.2	250	14	60.0	60.0	1018	02	0	8	5	4	260	4	-	-
200	1830	7/27	46°08'N	130°30'W	59.0	250	16	61.8	60.5	1018	01	0	7	7	3	270	5	32.48	0.56
201	2100	7/27	46°06'N	130°04'W	59.5	220	16	63.0	61.0	1019	02	0, 5	1	7	3	230	3	32.57	0.69
202	2312	7/27	46°05'N	129°48'W	60.3	220	14	63.8	63.2	1019	03	X	8	7	3	230	3	32.61	0.56
203	0215	7/28	46°02'N	129°22'W	60.8	200	12	62.7	62.7	1018	02	0	8	7	3	230	3	32.54	0.50
204	0450	7/28	46°01'N	128°55'W	60.4	220	18	62.0	62.0	1019	45	0	8	5	3	250	3	32.52	0.68
205	0700	7/28	46°01'N	128°55'W	60.5	230	20	61.2	60.8	1018	45	X	X	5	3	XX	X	-	-
206	1400	7/28	46°02'N	128°39'W	60.3	220	19	62.1	61.2	1015	53	0	8	5	4	240	4	32.52	0.51
207	1630	7/28	46°01'N	128°14'W	60.4	230	16	62.0	60.8	1016	53	0	8	5	4	270	4	32.57	0.35
208	1830	7/28	46°01'N	127°54'W	61.0	200	18	63.0	63.0	1016	51	0	8	6	3	260	2	32.50	0.55
209	2105	7/28	45°58'N	127°29'W	61.5	230	17	65.8	64.0	1016	40	0	8	7	3	260	2	32.43	0.51

Table 3.--Summary of observations at bathythermograph lowerings, Hugh M. Smith cruise 40 (NEPAS)(for coded values see H. O. Pub. 606-c)(cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Barometer, mb.	Weather	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
210	2335	7/28	45°45'N	127°19'W	62.5	240	11	63.2	63.2	1016	40	0	8	6	3	260	2	32.41	0.54
211	0200	7/29	45°29'N	127°06'W	62.5	330	12	64.0	64.0	1017	47	0	8	4	3	260	2	32.30	-
212	0435	7/29	45°15'N	126°53'W	63.2	330	10	62.0	62.0	1017	20	0	8	7	2	260	2	-	0.57
213	0540	7/29	45°15'N	126°53'W	63.2	330	10	62.0	62.0	1017	20	0	8	7	2	260	2	-	-
214	1400	7/29	45°00'N	126°32'W	62.5	350	09	61.0	59.5	1018	02	6, 8	8	9	2	260	2	31.71	0.42
215	1630	7/29	44°46'N	126°19'W	64.1	010	14	63.0	61.6	1018	01	6, 8	3	9	2	260	2	30.21	0.33
216	1830	7/29	44°34'N	126°08'W	64.6	350	15	63.4	62.0	1018	03	6, 8	5	9	2	260	2	30.19	0.40
217	2105	7/29	44°20'N	125°54'W	64.4	320	11	64.3	61.8	1019	03	6, 8	6	9	2	290	1	30.28	0.40
218	2335	7/29	44°13'N	125°47'W	64.4	340	15	64.3	60.3	1018	03	6	7	9	3	280	1	30.84	0.42
219	0200	7/30	44°05'N	125°27'W	61.6	330	14	63.8	60.2	1018	03	6, 8	7	9	2	280	1	30.62	0.48
220	0420	7/30	44°00'N	125°07'W	60.8	330	17	62.6	61.0	1018	02	6, 8	7	9	2	280	1	-	0.64
221	0525	7/30	44°00'N	125°07'W	60.0	330	17	62.6	62.0	1018	02	X	X	9	2	XX	X	-	-
222	0810	7/30	43°49'N	124°53'W	60.6	340	14	61.3	60.2	1018	02	X	X	9	2	XX	X	32.12	0.52
223	1400	7/30	43°43'N	124°58'W	60.9	010	10	63.4	61.8	1018	01	8	3	9	2	280	1	32.05	0.41
224	1640	7/30	43°34'N	125°20'W	61.0	350	08	66.2	63.9	1019	02	5, 8	2	9	2	290	2	32.00	0.30
225	1805	7/30	43°29'N	125°33'W	59.3	350	08	67.1	63.8	1020	01	5, 8	1	9	2	290	2	32.47	-
226	1825	7/30	43°27'N	125°38'W	60.0	350	08	67.1	63.8	1020	01	5, 8	1	9	2	290	2	-	0.30
227	2100	7/30	43°18'N	126°00'W	62.4	350	08	65.4	62.7	1021	02	5, 8	1	9	2	290	2	-	0.29
228	2330	7/30	43°12'N	126°16'W	64.3	330	12	65.1	62.5	1021	03	8	4	9	2	330	2	-	0.40
229	0210	7/31	43°05'N	126°37'W	64.2	340	09	64.0	61.2	1021	01	8	3	9	2	310	3	-	0.32
230	0435	7/31	42°56'N	126°59'W	64.0	330	14	62.9	60.7	1021	02	8	2	9	2	310	2	32.07	0.44
231	0625	7/31	42°56'N	126°59'W	64.0	330	10	62.9	60.7	1021	02	X	X	9	2	XX	X	32.07	-
232	1440	7/31	42°46'N	127°18'W	63.6	320	16	62.3	59.1	1022	03	8	6	9	2	310	1	-	-
233	1630	7/31	42°42'N	127°31'W	63.4	340	18	63.0	61.0	1023	02	8	6	9	2	340	1	32.19	0.50
234	1830	7/31	42°37'N	127°46'W	63.5	350	18	66.3	62.9	1024	02	4, 8	6	9	2	340	1	32.14	0.41
235	2100	7/31	42°32'N	128°05'W	63.2	350	18	65.2	61.6	1024	01	4, 8	7	9	2	340	1	32.16	0.56
236	2330	7/31	42°28'N	128°22'W	63.6	340	14	64.7	62.5	1025	03	4, 8	2	9	2	340	1	32.42	0.48
237	0200	8/1	42°23'N	128°44'W	63.0	360	17	63.3	61.9	1025	02	8	5	9	2	350	1	32.78	0.58
238	0430	8/1	42°17'N	129°05'W	62.6	360	17	62.5	61.0	1026	02	8	5	9	2	350	1	32.86	0.69
239	0630	8/1	42°16'N	129°05'W	62.5	350	16	62.5	61.0	1026	02	X	X	9	2	XX	X	32.86	-
240	1400	8/1	42°07'N	129°17'W	62.2	010	15	61.2	60.0	1027	03	6, 8	7	9	2	020	1	32.77	0.55
241	1630	8/1	42°00'N	129°37'W	62.7	340	14	63.1	61.8	1027	02	6, 8	8	9	2	020	1	32.86	0.54
242	1830	8/1	41°55'N	129°53'W	62.7	350	15	63.8	61.8	1027	02	6, 8	6	9	2	020	1	32.91	0.45
243	2105	8/1	41°48'N	130°13'W	63.3	350	18	65.7	63.0	1028	01	8	2	9	2	010	1	32.86	0.57
244	2340	8/1	41°44'N	130°28'W	63.4	360	13	64.8	60.2	1027	02	8	2	9	2	010	1	32.88	0.52

Table 3.--Summary of observations at bathythermograph lowerings, Hugh M. Smith cruise 40 (NEPAS)(for coded values see H. O. Pub. 606-c)(cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Barometer, mb.	Weather	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
245	0200	8/2	41°38'N	130°47'W	63.6	340	14	63.6	60.8	1027	02	8	4	9	2	010	1	32.94	0.48
246	0435	8/2	41°33'N	131°06'W	63.2	330	10	62.8	60.2	1027	02	8	5	9	2	010	1	32.74	-
247	0600	8/2	41°33'N	131°06'W	63.0	340	11	62.8	60.2	1028	02	X	X	9	2	XX	1	32.74	0.57
248	0805	8/2	41°33'N	130°47'W	62.9	330	13	61.2	59.2	1027	02	X	X	9	2	XX	X	32.86	0.42
249	1400	8/2	41°31'N	130°34'W	62.5	000	09	61.8	60.4	1025	02	8	2	9	2	010	2	32.93	0.51
250	1635	8/2	41°29'N	130°09'W	62.6	330	11	62.2	60.3	1025	03	8	3	9	2	360	1	32.88	0.63
251	1840	8/2	41°28'N	129°49'W	62.8	320	10	63.3	60.8	1025	02	8	3	9	1	020	1	32.86	0.49
252	2100	8/2	41°26'N	129°26'W	63.3	330	07	63.0	61.2	1024	02	1,8	2	9	1	020	1	32.93	0.44
253	2330	8/2	41°24'N	129°09'W	63.8	280	14	63.9	61.0	1017	03	1,8	3	9	1	010	1	32.84	0.49
254	0205	8/3	41°21'N	128°48'W	63.3	270	16	63.6	62.1	1022	03	0	8	9	1	010	1	32.90	0.46
255	0425	8/3	41°18'N	128°25'W	63.0	280	12	63.0	61.9	1021	02	0	8	9	1	340	1	32.86	0.55
256	0530	8/3	41°18'N	128°25'W	62.8	270	12	62.8	61.3	1021	02	X	X	9	2	300	1	32.86	-
257	1400	8/3	41°14'N	127°53'W	62.7	240	13	66.3	66.3	1015	55	X	X	5	2	240	2	32.85	0.49
258	1630	8/3	41°11'N	127°31'W	62.7	290	16	64.3	62.9	1016	01	1,8	6	9	2	260	2	32.75	0.51
259	1830	8/3	41°08'N	127°13'W	62.6	290	19	64.0	62.1	1016	01	0,8	6	9	3	260	2	32.53	0.40
260	2044	8/3	41°03'N	126°52'W	59.6	290	15	64.5	63.8	1015	02	0,8	6	9	2	260	2	32.60	0.52
261	2120	8/3	41°04'N	126°56'W	61.8	280	12	65.2	63.7	1015	02	0,8	6	9	2	260	2	32.76	0.68
262	0040	8/4	41°02'N	126°41'W	60.0	240	10	63.5	62.9	1015	02	0,8	6	9	3	280	2	32.79	-
263	0145	8/4	41°02'N	126°39'W	61.0	280	09	65.7	64.3	1014	02	0,8	6	9	3	280	2	32.79	0.57
264	0530	8/4	40°58'N	126°01'W	60.3	240	10	64.9	63.3	1014	01	0,8	4	9	2	XX	X	-	0.51
265	1415	8/4	40°47'N	125°33'W	60.3	220	10	62.0	59.1	1013	01	4	1	9	2	280	2	32.12	0.54
266	1506	8/4	40°47'N	125°24'W	57.7	220	10	60.6	58.2	1014	00	4	1	9	2	280	2	32.62	0.63
267	1620	8/4	40°48'N	125°15'W	54.9	180	12	58.8	56.3	1014	03	4	6	9	2	280	2	-	1.32
268	1735	8/4	40°48'N	125°02'W	54.1	160	13	60.8	57.3	1014	02	4,8	6	9	2	290	2	33.04	0.86
269	1835	8/4	40°48'N	125°01'W	54.2	160	11	60.8	57.3	1014	02	4,8	6	9	2	290	2	33.04	-
270	2105	8/4	40°41'N	125°16'W	54.7	190	13	61.1	57.5	1015	18	8	8	9	2	290	4	32.90	0.70
271	2220	8/4	40°38'N	125°25'W	56.3	200	13	59.9	58.7	1015	18	5,8	6	9	3	270	4	32.84	0.70
272	2350	8/4	40°35'N	125°34'W	60.4	200	13	61.4	59.8	1014	01	5,8	2	9	3	270	4	-	-
273	0210	8/5	40°31'N	125°51'W	60.3	230	12	60.3	59.8	1014	02	5,8	3	9	3	270	4	32.68	0.55
274	0545	8/5	40°26'N	126°16'W	59.7	220	12	61.3	60.1	1015	00	X	X	9	3	XX	X	32.64	0.63
275	1410	8/5	40°23'N	126°30'W	57.6	310	08	64.2	63.0	1015	02	5,8	7	9	3	270	4	32.64	-
276	1645	8/5	40°18'N	126°54'W	59.3	300	11	60.9	59.6	1017	01	0,5,8	5	9	2	290	3	33.03	0.67
277	1745	8/5	40°18'N	126°54'W	59.6	300	13	60.9	59.6	1017	01	0,5,8	5	9	2	290	3	33.03	-
278	1920	8/5	40°15'N	127°09'W	58.3	280	11	63.7	61.0	1017	02	0,5,8	6	9	3	320	3	32.94	0.39
279	2100	8/5	40°12'N	127°23'W	62.4	290	15	66.5	62.1	1018	03	5,8	6	9	3	280	3	32.68	0.49

Table 3.--Summary of observations at bathythermograph lowerings, Hugh M. Smith cruise 40 (NEPAS)(for coded values see H. O. Pub. 606-c)(cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Barometer, mb.	Weather	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
280	2330	8/5	40°07'N	127°38'W	63.1	310	15	64.9	60.9	1018	03	4,5,8	7	9	4	290	3	32.66	0.34
281	0210	8/6	40°03'N	127°57'W	62.7	300	18	63.5	60.7	1019	03	6	8	9	4	290	3	32.74	0.42
282	0425	8/6	40°01'N	128°16'W	63.0	320	14	62.3	59.2	1019	02	5,6	8	9	4	290	3	32.84	-
283	0925	8/6	40°16'N	128°32'W	63.0	080	15	63.7	60.7	1019	00	X	X	9	3	XX	X	32.84	-
284	1310	8/6	39°55'N	128°34'W	63.3	240	10	62.4	60.7	1018	50	0	8	8	2	280	4	32.83	-
285	1600	8/6	39°51'N	128°57'W	63.1	270	06	63.8	62.7	1019	01	0,5,6,8	7	9	2	310	4	32.84	0.56
286	1705	8/6	39°51'N	128°57'W	63.2	270	06	63.8	62.7	1019	01	0,5,6,8	7	9	2	310	4	32.84	-
287	1900	8/6	39°48'N	129°13'W	63.5	270	10	64.2	62.9	1019	15	0,8	7	6	3	280	1	32.83	0.59
288	2100	8/6	39°45'N	129°29'W	63.5	300	11	66.6	63.2	1019	15	0,8	7	6	3	280	1	32.87	0.55
289	2330	8/6	39°41'N	129°47'W	63.8	300	15	67.8	63.4	1019	02	0,8	7	6	3	280	1	32.92	0.55
290	0200	8/7	39°37'N	130°10'W	63.6	300	13	65.0	61.6	1019	02	6	8	9	3	310	1	32.91	0.56
291	0430	8/7	39°33'N	130°33'W	64.4	300	15	65.0	63.4	1019	XX	X	X	8	3	XX	X	32.98	0.58
292	0725	8/7	39°30'N	131°01'W	64.6	300	15	64.2	61.4	1020	XX	X	X	8	3	XX	X	32.93	0.52
293	1210	8/7	39°29'N	130°58'W	63.9	300	14	62.6	60.2	1019	00	X	X	7	3	XX	X	32.95	0.45
294	1310	8/7	39°29'N	130°58'W	63.8	300	14	62.6	60.2	1019	00	X	X	7	3	XX	X	32.95	-
295	1600	8/7	39°25'N	130°31'W	63.6	300	15	64.6	63.3	1020	02	0,8	8	8	3	330	2	32.93	0.61
296	1830	8/7	39°21'N	130°08'W	63.9	300	11	65.8	62.7	1020	02	0,8	8	8	3	330	2	33.00	0.55
297	2105	8/7	39°17'N	129°45'W	64.0	180	04	69.4	67.2	1020	18	0,8	8	8	3	330	2	33.00	-
298	2330	8/7	39°14'N	129°26'W	64.0	350	04	67.1	64.2	1020	01	2,8	5	9	2	290	1	32.95	0.55
299	0205	8/8	39°11'N	129°04'W	64.2	340	12	68.8	65.3	1019	01	2,8	6	9	2	290	1	32.99	0.59
300	0425	8/8	39°08'N	128°40'W	63.9	310	14	64.3	62.5	1020	00	X	X	9	2	290	1	32.92	0.57
301	0520	8/8	39°08'N	128°40'W	63.9	310	14	64.3	62.5	1020	00	X	X	9	2	290	1	32.92	-
302	1400	8/8	39°02'N	128°21'W	63.5	350	13	63.6	61.4	1021	03	2,8	7	9	2	330	1	32.95	0.59
303	1645	8/8	39°00'N	128°01'W	63.6	010	13	63.2	61.3	1022	51	0,6,8	7	9	2	340	2	32.96	0.56
304	1830	8/8	38°59'N	127°55'W	63.7	330	10	63.7	62.0	1022	02	6,8	7	9	2	320	1	33.02	0.56
305	2112	8/8	39°00'N	127°36'W	63.8	330	08	67.8	64.3	1022	02	4,6,8	7	9	2	320	1	32.93	0.56
306	2230	8/8	39°00'N	127°33'W	64.2	310	06	67.0	59.3	1021	01	5,8	6	9	2	270	2	32.99	NS
307	2330	8/8	39°00'N	127°33'W	64.0	310	06	67.0	59.3	1021	01	5,8	6	9	2	270	2	32.99	-
308	0200	8/9	39°03'N	127°17'W	63.7	000	00	63.9	59.6	1020	01	5,8	2	9	1	270	1	32.88	0.56
309	0425	8/9	39°03'N	127°01'W	61.2	330	09	63.0	59.2	1021	02	5,6	1	9	1	270	1	32.86	0.61
310	1400	8/9	39°08'N	126°39'W	62.9	270	06	64.7	60.8	1019	02	6	8	9	1	290	2	32.88	0.50
311	1630	8/9	39°09'N	126°15'W	62.9	250	04	65.0	61.0	1019	02	0	9	9	1	320	2	32.88	0.60
312	1830	8/9	39°10'N	125°56'W	62.7	360	13	61.5	59.9	1019	28	0	8	9	2	320	2	32.86	0.60
313	2030	8/9	39°11'N	125°37'W	63.0	320	08	64.0	60.0	1019	01	0,6	6	9	2	340	1	32.88	0.56
314	2130	8/9	39°11'N	125°37'W	63.1	320	08	64.0	60.0	1019	01	0,6	6	9	2	340	1	32.88	-

Table 3.--Summary of observations at bathythermograph lowerings, Hugh M. Smith cruise 40 (NEPAS)(for coded values see H. O. Pub. 606-c)(cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Barometer, mb.	Weather	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
315	2300	8/9	39°09'N	125°26'W	62.8	310	15	64.2	62.2	1022	01	0,6	2	9	2	340	1	32.89	0.55
316	0130	8/10	39°05'N	125°02'W	62.5	360	15	63.1	59.9	1017	01	8	1	9	2	300	1	32.87	0.54
317	0353	8/10	39°01'N	124°37'W	58.0	330	17	61.0	58.5	1017	02	8	1	9	3	310	1	32.81	0.60
318	1205	8/10	38°54'N	124°21'W	56.1	330	18	58.9	57.1	1015	02	8	1	9	3	330	2	33.17	1.17
319	1305	8/10	38°54'N	124°21'W	56.2	330	20	58.9	57.1	1015	02	8	1	9	3	330	2	33.17	-
320	1630	8/10	38°44'N	124°44'W	57.5	320	18	63.3	59.8	1016	02	8	1	9	3	330	2	33.38	1.10
321	1830	8/10	38°39'N	124°55'W	57.6	310	16	64.8	60.2	1017	02	8	1	9	3	330	2	33.30	1.19
322	2000	8/10	38°36'N	125°03'W	60.9	320	18	65.1	60.3	1017	02	8	1	9	3	300	2	33.03	0.94
323	2200	8/10	38°33'N	125°19'W	63.0	320	22	66.7	61.2	1018	02	8	1	9	3	320	2	32.87	0.71
324	2335	8/10	38°31'N	125°31'W	62.6	340	20	64.1	59.9	1017	03	8	6	9	3	320	2	32.85	0.56
325	0215	8/11	38°28'N	125°48'W	62.7	340	18	64.3	61.2	1017	01	8	2	9	3	320	2	32.95	0.63
326	0410	8/11	38°26'N	126°04'W	62.8	330	22	62.8	59.2	1018	01	8	2	9	3	XX	X	32.86	0.56
327	0515	8/11	38°26'N	126°04'W	62.7	330	22	62.8	59.2	1018	01	8	2	9	3	XX	X	32.86	-
328	1000	8/11	38°40'N	126°33'W	62.6	330	20	63.5	59.6	1017	02	8	3	9	3	XX	X	32.90	0.54
329	1245	8/11	38°26'N	126°47'W	61.2	020	16	63.8	60.3	1017	02	8	4	9	3	XX	X	32.93	0.69
330	1430	8/11	38°19'N	127°01'W	60.2	340	09	63.8	60.4	1018	02	8	3	9	3	320	2	32.99	0.63
331	1630	8/11	38°13'N	127°16'W	63.2	330	15	65.3	60.8	1019	03	0,6,8	6	9	2	360	1	32.88	0.58
332	1740	8/11	38°11'N	127°24'W	63.8	360	12	65.3	61.7	1019	02	0,6,8	6	9	2	360	1	32.95	0.58
333	2100	8/11	38°03'N	127°50'W	63.7	330	14	64.7	60.8	1021	01	6,2,8	2	9	2	320	1	33.04	0.50
334	2200	8/11	38°03'N	127°51'W	63.8	330	14	64.7	60.8	1021	01	6,2,8	2	9	2	320	1	33.04	-
335	0030	8/12	37°59'N	128°08'W	64.4	330	13	66.7	61.5	1017	02	8	2	9	2	300	2	32.94	0.44
336	0315	8/12	37°54'N	128°29'W	63.9	340	16	64.9	60.7	1021	01	8	1	9	2	340	1	32.94	0.47
337	0600	8/12	37°48'N	128°55'W	64.1	330	15	63.8	59.8	1022	02	8	2	9	2	310	1	32.97	0.46
338	0800	8/12	37°42'N	129°17'W	65.5	330	13	64.2	60.0	1023	01	8	1	9	2	310	1	33.03	0.39
339	1005	8/12	37°37'N	129°39'W	65.5	320	17	65.5	61.5	1022	00	X	X	8	2	XX	X	33.08	0.52
340	1205	8/12	37°31'N	130°01'W	65.4	340	15	65.3	61.1	1023	02	6,8	8	8	2	XX	X	33.06	0.50
341	1300	8/12	37°29'N	130°12'W	65.3	320	11	64.7	59.2	1023	02	6	8	9	2	XX	X	33.06	NS
342	1355	8/12	37°29'N	130°12'W	65.3	320	11	64.7	59.2	1023	02	6	8	9	2	XX	X	33.06	-
343	1630	8/12	37°26'N	129°55'W	65.6	360	15	64.4	58.8	1025	02	6	8	9	2	360	1	33.22	0.45
344	1830	8/12	37°22'N	129°37'W	65.1	360	13	65.0	59.9	1024	02	6	8	9	2	360	1	33.33	0.57
345	2100	8/12	37°19'N	129°20'W	65.6	360	16	65.4	60.6	1024	02	6	8	9	2	360	1	33.19	0.44
346	2310	8/12	37°16'N	129°08'W	64.3	350	14	66.4	62.0	1023	02	6	8	9	2	360	1	33.10	0.44
347	0230	8/13	37°11'N	128°46'W	64.2	350	15	64.0	61.0	1023	02	6	8	9	3	360	1	33.04	0.44
348	0405	8/13	37°09'N	128°35'W	64.3	360	15	64.3	60.0	1023	02	6	8	9	3	XX	X	33.10	0.50
349	0505	8/13	37°09'N	128°35'W	64.2	360	15	64.3	60.0	1023	02	6	8	9	3	XX	X	33.10	-

Table 3.--Summary of observations at bathythermograph lowerings, Hugh M. Smith cruise 40 (NEPAS)(for coded values see H. O. Pub. 606-c)(cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Barometer, mb.	Weather	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
350	1400	8/13	37°02'N	128°23'W	64.1	010	12	63.9	60.0	1023	02	6	8	9	3	010	1	32.99	-
351	1635	8/13	37°02'N	128°04'W	64.3	020	26	64.2	60.4	1023	02	8	8	9	2	360	2	33.03	0.32
352	1835	8/13	37°02'N	127°39'W	63.8	020	29	64.4	60.4	1023	02	8	8	9	3	360	2	33.01	0.33
353	2100	8/13	37°01'N	127°30'W	63.5	020	19	64.6	60.3	1022	01	8	7	9	3	360	3	32.95	0.31
354	2345	8/13	36°58'N	127°11'W	63.4	350	21	63.7	60.3	1021	01	8	4	9	3	360	3	32.94	0.30
355	0207	8/14	36°54'N	126°51'W	63.4	350	21	63.3	61.3	1020	01	8	2	9	3	360	3	32.92	0.44
356	0400	8/14	36°52'N	126°35'W	63.4	330	20	63.0	60.9	1020	02	8	2	9	3	360	3	32.95	0.57
357	0500	8/14	36°52'N	126°35'W	63.3	330	20	63.0	60.9	1020	02	8	2	9	3	360	3	32.95	-
358	1405	8/14	36°48'N	126°21'W	62.7	350	18	62.8	58.0	1019	02	8	7	9	3	360	3	32.92	0.33
359	1630	8/14	36°52'N	126°01'W	62.8	350	21	62.5	57.1	1019	02	6	6	9	3	360	3	32.92	-
360	1905	8/14	36°57'N	125°40'W	62.6	330	19	63.1	59.6	1019	02	6	6	9	3	010	3	32.90	0.33
361	2100	8/14	37°01'N	125°26'W	63.1	340	16	63.0	59.8	1018	02	4	6	9	3	350	3	32.94	-
362	2300	8/14	37°03'N	125°14'W	61.3	340	16	62.7	59.6	1018	01	8	1	9	3	350	3	32.97	0.41
363	0210	8/15	37°08'N	124°54'W	60.0	330	15	62.1	59.9	1017	02	8	1	9	3	350	3	33.04	0.50
364	0400	8/15	37°12'N	124°41'W	60.3	320	17	61.1	59.2	1017	02	8	1	9	3	350	3	33.21	-
365	0550	8/15	37°12'N	124°41'W	59.8	320	17	61.1	59.2	1017	02	8	1	9	3	XX	X	33.21	0.57
366	0800	8/15	37°19'N	124°16'W	59.5	320	21	61.1	58.8	1016	02	8	1	9	3	XX	X	33.22	0.59
367	1000	8/15	37°26'N	123°53'W	57.3	270	24	60.2	58.2	1016	00	X	X	9	2	XX	X	33.58	0.69
368	1205	8/15	37°31'N	123°32'W	57.9	320	23	58.3	56.4	1016	00	X	X	9	3	XX	X	33.66	0.63
369	1305	8/15	37°31'N	123°32'W	58.0	320	23	58.3	56.4	1016	00	X	X	9	3	XX	X	33.66	-
370	0005	8/27	37°24'N	122°35'W	56.5	160	01	59.8	56.6	1020	03	8	7	9	1	080	1	32.70	1.43
371	0530	8/27	36°44'N	122°25'W	59.4	320	15	58.1	56.3	1020	00	X	X	8	1	XX	X	-	-
372	0740	8/27	36°25'N	122°20'W	56.2	320	12	60.8	57.5	1020	00	X	X	8	1	XX	X	33.40	0.89
373	0930	8/27	36°04'N	122°16'W	58.0	320	18	60.5	57.7	1020	00	X	X	8	2	XX	X	-	-
374	1200	8/27	35°39'N	122°13'W	56.5	320	18	59.8	57.0	1020	00	X	X	8	3	XX	X	33.60	1.12
375	1258	8/27	35°39'N	122°13'W	56.2	320	18	59.7	56.9	1020	00	1, 3	2	8	3	340	1	33.60	-
376	1530	8/27	35°32'N	122°33'W	57.5	340	26	61.0	57.8	1020	03	1, 3	3	9	3	340	1	33.42	0.88
377	1800	8/27	35°25'N	122°51'W	58.2	350	24	61.5	58.2	1022	03	4	6	8	3	340	1	33.44	0.75
378	2100	8/27	35°14'N	123°13'W	60.0	360	23	64.3	60.3	1022	01	4	3	9	3	340	1	33.55	0.62
379	2330	8/27	35°01'N	123°28'W	62.5	360	22	64.8	60.6	1021	01	4	1	9	3	340	1	33.48	0.68
380	0205	8/28	34°48'N	123°43'W	62.2	330	21	63.8	60.1	1020	01	4	1	9	3	340	1	33.51	0.63
381	0430	8/28	34°34'N	124°05'W	63.0	330	21	63.0	59.2	1021	00	X	X	8	3	340	1	33.31	0.74
382	0630	8/28	34°25'N	124°26'W	63.9	340	20	63.8	59.7	1021	00	X	X	8	3	XX	X	33.15	0.69
383	0835	8/28	34°16'N	124°48'W	64.1	320	18	64.8	60.4	1021	00	X	X	8	3	XX	X	33.12	0.63
384	1035	8/28	34°06'N	125°10'W	63.7	320	20	62.8	59.8	1020	00	X	X	8	3	XX	X	33.13	0.77

Table 3.--Summary of observations at bathythermograph lowerings, Hugh M. Smith cruise 40 (NEPAS)(for coded values see H. O. Pub. 606-c)(cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Barometer, mb.	Weather	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
385	1258	8/28	33°54'N	125°36'W	64.0	320	20	64.0	58.8	1021	00	X	X	8	3	XX	X	33.24	0.58
386	1356	8/28	33°54'N	125°36'W	63.9	320	19	63.0	58.0	1021	03	6,8	3	8	3	320	2	33.24	-
387	1630	8/28	33°48'N	125°56'W	65.0	320	18	66.7	59.8	1021	02	6,8	2	9	3	320	2	33.28	0.84
388	1900	8/28	33°42'N	126°15'W	66.1	320	16	68.3	61.8	1021	02	6,8	2	9	2	320	2	33.37	0.69
389	2100	8/28	33°37'N	126°30'W	66.0	350	13	66.9	60.9	1021	02	8	3	9	2	320	2	33.37	-
390	0035	8/29	33°24'N	127°06'W	66.8	310	14	68.7	62.7	1020	02	8	4	9	2	320	2	33.37	0.57
391	0356	8/29	33°08'N	127°47'W	66.3	330	08	66.2	61.5	1020	02	6,8	4	9	2	320	2	33.22	0.47
392	0458	8/29	33°08'N	127°47'W	66.3	330	08	66.1	61.3	1020	00	X	X	9	2	320	2	33.22	-
393	0900	8/29	32°55'N	128°25'W	66.5	290	08	68.2	63.2	1020	00	X	X	9	2	XX	X	-	-
394	1300	8/29	32°38'N	129°10'W	67.2	310	07	66.0	61.2	1019	00	X	X	9	1	XX	X	33.39	-
395	1600	8/29	32°26'N	129°43'W	68.3	340	05	67.8	62.1	1020	02	6,8	1	9	1	010	1	33.64	-
396	1657	8/29	32°26'N	129°43'W	68.3	340	05	69.0	63.0	1020	03	6,8	2	9	1	010	1	33.64	-
397	2100	8/29	32°10'N	130°28'W	70.0	320	07	73.4	65.4	1020	03	6,8	4	9	1	010	1	34.04	-
398	0100	8/30	31°55'N	131°11'W	71.0	320	04	71.5	64.0	1019	02	6,8	2	9	1	010	1	34.04	-
399	0353	8/30	31°43'N	131°44'W	71.1	270	04	70.3	63.5	1019	02	6	3	9	1	010	1	34.09	-
400	0445	8/30	31°43'N	131°44'W	71.1	270	05	70.5	64.0	1020	00	X	X	9	1	010	1	34.09	-
401	0900	8/30	31°29'N	132°22'W	69.4	270	05	71.3	65.0	1020	00	X	X	8	1	XX	X	33.98	-
402	1300	8/30	31°13'N	133°03'W	70.4	270	14	72.0	67.4	1019	00	X	X	8	1	XX	X	33.93	-
403	1555	8/30	31°01'N	133°36'W	70.2	270	08	71.0	67.2	1021	03	1,4,8	2	9	1	XX	1	34.27	-
404	1655	8/30	31°01'N	133°36'W	70.2	270	08	72.0	67.6	1021	02	1,4,8	4	9	1	XX	1	34.27	-
405	2100	8/30	30°44'N	134°20'W	70.5	280	12	73.0	69.0	1021	03	4,1,8	3	9	2	XX	1	34.31	-
406	0100	8/31	30°27'N	135°01'W	71.1	280	12	74.3	69.0	1021	02	4,8	6	9	2	320	1	34.11	-
407	0357	8/31	30°14'N	135°33'W	71.4	280	09	72.9	68.1	1021	02	4,8	2	9	1	320	1	34.25	-
408	0450	8/31	30°14'N	135°33'W	71.4	280	09	72.5	68.0	1021	00	X	X	9	1	320	1	34.25	-
409	0850	8/31	30°03'N	136°05'W	70.5	260	10	72.8	68.8	1022	00	X	X	9	1	XX	X	34.31	-
410	1300	8/31	29°46'N	136°54'W	71.2	300	11	71.1	67.0	1022	00	X	X	9	1	XX	X	34.88	-
411	1655	8/31	29°29'N	137°39'W	72.3	280	09	72.5	69.4	1023	03	1,4,8	5	9	1	300	2	35.25	-
412	1749	8/31	29°29'N	137°39'W	72.3	280	08	72.9	68.4	1023	02	4,6,8	5	9	1	300	2	35.25	-
413	2200	8/31	29°12'N	138°23'W	73.5	300	12	76.8	70.4	1023	02	4,6,8	6	9	1	300	2	35.35	-
414	0200	9/1	28°57'N	139°03'W	73.2	330	07	73.8	69.2	1023	50	4,6,8	7	9	1	300	2	35.41	-
415	0450	9/1	28°45'N	139°36'W	73.2	330	05	73.6	69.8	1023	21	X	7	6	2	XX	2	35.43	-
416	0545	9/1	28°45'N	139°36'W	73.3	330	07	73.7	69.0	1024	21	X	8	6	1	XX	2	35.43	-
417	1000	9/1	28°29'N	140°14'W	73.3	350	06	74.0	69.8	1023	00	X	X	9	1	XX	2	35.34	-
418	1305	9/1	28°17'N	140°47'W	73.7	350	06	73.4	69.4	1022	00	X	X	8	1	XX	2	35.32	-
419	1655	9/1	28°01'N	141°30'W	73.1	030	08	74.8	69.8	1023	03	1,8	2	9	1	070	1	35.37	-

Table 3.--Summary of observations at bathythermograph lowerings, Hugh M. Smith cruise 40 (NEPAS)(for coded values see H. O. Pub. 606-c)(cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Barometer, mb.	Weather	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
420	1755	9/1	28°01'N	141°30'W	73.2	030	07	74.9	69.1	1023	03	5,8	4	9	1	070	1	35.37	-
421	2200	9/1	27°43'N	142°13'W	74.5	050	10	72.2	69.9	1023	02	6	2	9	1	120	1	35.41	-
422	0100	9/2	27°32'N	142°43'W	74.1	050	10	76.8	70.0	1021	02	5,6	4	9	1	130	1	35.37	-
423	0450	9/2	27°16'N	143°27'W	74.1	050	10	76.2	70.0	1022	02	6	2	9	1	130	1	35.32	-
424	0547	9/2	27°16'N	143°27'W	74.1	050	10	74.0	69.9	1022	00	X	X	9	1	130	1	35.32	-
425	1000	9/2	27°00'N	144°06'W	73.7	100	08	74.8	70.7	1022	00	X	X	8	1	XX	X	35.41	-
426	1245	9/2	26°46'N	144°38'W	73.7	100	08	73.8	68.4	1021	00	X	X	9	1	XX	X	35.41	-
427	1655	9/2	26°28'N	145°20'W	73.4	050	05	71.8	68.4	1022	21	0,8	8	6	1	100	1	35.46	-
428	1752	9/2	26°28'N	145°20'W	73.4	050	05	74.0	69.3	1022	01	0,8	6	8	1	100	1	35.46	-
429	2200	9/2	26°10'N	146°01'W	75.3	090	13	76.3	70.4	1021	01	0,8	4	9	2	100	1	35.26	-
430	0100	9/3	25°59'N	146°28'W	75.4	250	10	75.0	69.3	1019	02	0,8	5	9	2	100	1	35.26	-
431	0450	9/3	25°41'N	147°10'W	74.3	070	10	75.9	70.9	1019	02	1,6,8,3	7	9	2	100	1	35.30	-
432	1000	9/3	25°25'N	147°48'W	75.0	140	08	73.6	69.9	1020	50	X	8	9	2	100	1	35.41	-
433	1300	9/3	25°12'N	148°20'W	75.3	100	13	74.4	70.8	1019	00	X	X	8	2	XX	X	35.37	-
434	1655	9/3	24°55'N	149°00'W	75.6	100	15	75.6	71.5	1019	02	4,6,8	6	9	2	070	2	35.26	-
435	1802	9/3	24°55'N	149°00'W	75.5	100	18	73.8	71.3	1019	03	1,6	6	9	2	070	2	35.26	-
436	2200	9/3	24°38'N	149°40'W	75.4	140	05	75.2	71.6	1019	16	0,1,8	7	6	2	130	2	35.39	-
437	0100	9/4	24°25'N	150°09'W	76.6	070	09	77.5	71.9	1018	15	1,5,7,6	7	7	2	130	2	35.39	-
438	0550	9/4	24°07'N	150°51'W	76.0	100	07	75.5	71.6	1019	00	X	6	9	2	130	2	35.25	-
439	0645	9/4	24°07'N	150°51'W	76.1	100	08	75.2	71.3	1019	00	X	X	9	2	130	2	35.25	-
440	1100	9/4	23°52'N	151°28'W	75.9	100	13	72.7	71.0	1018	00	X	X	9	2	XX	X	35.35	-
441	1400	9/4	23°39'N	151°59'W	76.4	070	07	75.6	71.7	1017	00	X	X	9	2	XX	X	-	-
442	1753	9/4	23°21'N	152°41'W	76.7	070	14	76.5	73.0	1018	15	6,8,1	6	8	3	070	1	34.92	-
443	1900	9/4	23°21'N	152°41'W	76.7	070	12	76.5	72.8	1018	15	1,6,8	6	8	3	070	1	34.92	-
444	2300	9/4	23°04'N	153°24'W	76.8	040	07	77.0	73.3	1017	50	1,6,8	8	8	2	070	1	35.19	-
445	0200	9/5	22°51'N	153°54'W	77.2	050	11	79.8	78.8	1015	01	1,6,8	5	8	2	070	1	35.17	-
446	0550	9/5	22°32'N	154°39'W	76.8	060	06	77.9	72.4	1017	02	X	7	9	2	060	1	35.17	-
447	0645	9/5	22°32'N	154°39'W	76.7	060	15	77.4	70.9	1017	01	X	2	9	2	060	1	35.17	-
448	1100	9/5	22°15'N	155°17'W	76.9	090	15	76.4	72.4	1016	50	X	2	7	2	XX	X	35.19	-
449	1500	9/5	21°58'N	155°58'W	77.3	090	16	76.4	70.8	1015	00	X	X	7	2	XX	X	34.99	
449A	1755	9/5	21°45'N	156°30'W	76.8	090	18	77.8	72.9	1016	03	1,8	8	9	3	090	1	34.94	-
450	1900	9/5	21°45'N	156°30'W	76.7	090	16	76.6	72.2	1016	02	1,8	8	9	3	090	1	34.94	-

Table 4.--Summary of observations at bathythermograph lowerings, John R. Manning cruise 36 (NEPAS) (for coded values see H. O. Pub. 606-c)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Barometer, mb.	Weather	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
1	1730	6/12	22°13'N	156°37'W	76.5	080	17	77.0	70.2	1020	02	6	6	8	4	090	4	-	-
2	2330	6/12	22°41'N	156°09'W	76.5	090	20	80.0	72.0	1020	02	6	3	8	4	090	4	-	-
3	0530	6/13	23°14'N	155°48'W	76.5	090	18	78.0	72.0	1020	02	6	1	9	3	090	4	35.19	-
4	1130	6/13	23°45'N	155°17'W	76.0	090	16	76.7	72.0	1021	00	6	8	7	3	090	4	-	-
5	1730	6/13	24°17'N	154°45'W	76.0	100	20	76.3	72.0	1022	03	6	7	7	4	100	4	-	-
6	2330	6/13	24°49'N	154°13'W	76.5	090	19	79.0	74.0	1022	02	4,5,6	7	8	4	090	4	35.34	-
7	0530	6/14	25°19'N	153°41'W	76.0	080	19	76.0	71.5	1022	01	6,8	5	8	4	090	4	35.34	-
8	1130	6/14	25°51'N	153°08'W	75.5	080	15	75.1	70.0	1022	01	1,4,6	4	8	4	090	4	-	-
9	1730	6/14	26°24'N	152°36'W	75.0	080	16	76.5	71.0	1020	03	1,6,8	5	8	3	110	4	35.48	-
10	2330	6/14	26°54'N	152°09'W	75.5	090	12	76.5	71.0	1022	01	1,6,8	2	9	3	110	1	-	-
11	0530	6/15	27°26'N	151°36'W	75.5	090	15	75.5	70.0	1022	03	1,6,8	7	9	4	110	4	35.57	-
12	1130	6/15	27°55'N	151°01'W	75.2	070	11	74.0	70.0	1021	02	8	2	7	2	070	1	-	-
13	1730	6/15	28°31'N	150°25'W	75.0	090	14	76.0	70.5	1021	02	1,4,6,8	3	9	2	090	1	35.68	-
14	0005	6/16	29°11'N	149°53'W	76.0	090	15	79.0	69.0	1021	01	1,6,8	3	9	4	090	1	-	-
15	0530	6/16	29°41'N	149°15'W	74.0	090	12	74.5	68.0	1020	02	1,6,8	3	9	3	090	4	35.34	0.37
16	1130	6/16	30°17'N	148°41'W	73.2	090	04	72.0	66.0	1020	02	8	6	7	2	090	1	-	-
17	1730	6/16	30°53'N	148°01'W	73.2	090	04	73.8	67.0	1020	02	6,2,4	1	9	2	090	1	35.19	0.22
18	2330	6/16	31°27'N	147°21'W	74.5	070	07	75.0	68.0	1022	02	5,1	3	9	3	130	1	-	-
19	0530	6/17	31°58'N	146°40'W	73.8	080	10	74.0	68.0	1023	03	4,5	4	9	2	090	1	34.88	0.25
20	1130	6/17	32°34'N	146°10'W	70.4	130	04	71.0	68.2	1024	02	5	8	6	2	060	1	-	-
21	1730	6/17	33°13'N	145°38'W	69.3	080	05	71.8	69.5	1026	03	1,4	8	7	1	160	1	34.36	0.97
22	2330	6/17	33°51'N	145°02'W	73.0	140	02	73.0	67.1	1023	02	8,5,2	1	9	2	000	1	-	-
23	0530	6/18	34°21'N	144°25'W	70.3	160	02	72.0	67.0	1026	02	8,5,2	2	9	2	XX	1	34.22	0.32
24	1130	6/18	35°02'N	143°51'W	69.8	230	05	69.8	67.1	1026	02	8	2	8	2	XX	1	-	-
25	1730	6/18	35°43'N	143°17'W	67.0	230	11	67.1	66.2	1023	02	1,8	5	8	2	300	1	34.29	0.21
26	2330	6/18	36°01'N	143°00'W	66.3	230	12	69.3	67.0	1024	02	6,5	8	9	2	240	1	-	-
27	0530	6/19	36°10'N	142°52'W	65.5	250	13	66.6	64.5	1023	02	6	8	7	3	250	2	33.95	0.30
28	1630	6/19	36°14'N	142°45'W	65.5	310	15	66.0	64.0	1024	02	0,6	9	7	4	300	1	34.02	-
29	2330	6/19	36°42'N	141°57'W	63.9	160	12	60.0	59.0	1025	02	6	7	9	5	160	5	-	0.43
30	0530	6/20	36°50'N	141°44'W	63.6	360	16	62.5	63.6	1023	02	0	8	8	2	350	1	33.82	0.46
31	1615	6/20	36°45'N	141°45'W	62.9	070	06	60.6	54.0	1027	02	6	5	8	2	090	X	-	0.32
32	2330	6/20	37°22'N	140°59'W	63.8	040	12	60.0	56.0	1026	02	6	X	8	2	020	1	33.69	-
33	0530	6/21	37°58'N	140°16'W	63.0	040	04	62.0	55.5	1026	02	6	8	7	3	020	1	33.68	1.30
34	1130	6/21	38°25'N	139°44'W	62.0	050	12	59.9	53.7	1026	02	6	8	6	3	050	2	-	-
35	1730	6/21	38°52'N	139°12'W	62.0	000	00	60.0	54.0	1026	02	6	8	7	2	010	1	33.51	-

Table 4.--Summary of observations at bathythermograph lowerings, John R. Manning cruise 36 (NEPAS) (for coded values see H. O. Pub. 606-c) (cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Barometer, mb.	Weather	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
36	2330	6/21	39°19'N	138°39'W	61.5	160	11	62.5	57.5	1025	02	6	8	7	2	350	1	-	-
37	0530	6/22	39°44'N	138°10'W	61.8	190	13	61.1	56.2	1023	02	6	6	7	2	190	2	33.48	0.31
38	1600	6/22	39°43'N	138°02'W	61.5	240	10	63.0	58.5	1022	02	6	8	7	3	250	1	-	0.42
39	2330	6/22	40°24'N	137°08'W	60.4	220	11	65.7	60.2	1022	02	6	7	9	2	220	1	-	-
40	0530	6/23	40°52'N	136°28'W	60.0	240	15	60.0	59.0	1023	50	6	8	7	3	240	1	33.08	0.63
41	1130	6/23	41°22'N	135°46'W	59.5	010	08	59.0	55.5	1024	01	8	2	8	3	230	1	-	-
42	1730	6/23	41°58'N	135°04'W	59.5	350	11	59.1	53.0	1026	03	6, 8	4	9	3	350	4	32.97	0.43
43	2330	6/23	41°10'N	135°04'W	61.5	350	09	60.0	54.0	1026	01	6	6	9	3	340	1	-	-
44	0530	6/24	40°33'N	135°04'W	61.0	300	06	60.5	55.0	1026	03	6, 5	4	8	3	340	1	33.33	0.58
45	1130	6/24	39°48'N	135°01'W	62.5	410	11	60.8	54.5	1028	00	8	4	5	3	XX	X	-	-
46	1730	6/24	38°59'N	134°59'W	63.5	050	11	60.5	55.0	1030	03	8	8	8	2	090	1	33.60	0.27
47	2330	6/24	39°20'N	134°57'W	62.5	040	06	66.4	59.0	1026	01	6	6	8	2	350	1	-	-
48	0530	6/25	39°56'N	134°58'W	63.0	030	05	59.8	55.0	1026	01	6, 8, 1	2	7	1	300	2	33.66	-
49	1500	6/25	39°58'N	134°52'W	62.5	110	02	63.0	58.0	1024	02	6	2	8	1	140	1	33.48	0.59
50	2330	6/25	38°55'N	134°50'W	65.8	350	07	66.8	59.8	1024	01	8	4	9	1	090	2	-	-
51	0500	6/26	38°30'N	134°35'W	64.8	350	07	64.0	59.0	1024	02	8	5	9	2	350	1	33.69	-
52	1500	6/26	38°30'N	134°32'W	64.0	150	08	63.2	59.2	1023	02	8, 6	6	9	2	170	3	33.77	0.55
53	2330	6/26	37°36'N	134°00'W	65.5	350	10	67.0	62.0	1026	02	8, 6	2	9	2	010	1	-	-
54	0530	6/27	36°50'N	133°52'W	65.5	320	08	65.0	63.0	1024	03	6	6	8	2	350	1	33.80	0.54
55	1530	6/27	36°44'N	133°48'W	65.5	330	08	67.5	65.5	1023	03	6	8	8	2	350	1	-	-
56	2330	6/27	35°49'N	133°47'W	66.5	350	11	69.0	66.5	1022	02	6	7	8	2	350	1	33.80	-
57	0530	6/28	35°01'N	133°43'W	68.1	340	13	66.8	65.5	1021	45	9	9	1	4	340	4	33.89	0.29
58	1130	6/28	34°14'N	133°39'W	66.5	340	14	66.0	65.0	1020	01	6	3	8	2	340	1	-	-
59	1730	6/28	33°25'N	133°36'W	67.5	350	23	68.5	66.0	1021	20	6, 8	6	8	4	010	3	34.14	0.36
60	2330	6/28	32°38'N	133°31'W	68.1	200	15	69.5	69.5	1020	03	6	6	6	4	040	4	-	-
61	0530	6/29	31°58'N	133°28'W	67.5	040	25	64.0	67.7	1020	20	6	8	7	4	040	4	34.00	0.33
62	1130	6/29	31°12'N	133°25'W	66.0	070	14	68.5	63.5	1019	02	6	8	7	4	090	3	-	-
63	1730	6/29	31°13'N	132°57'W	66.8	170	19	66.0	61.0	1020	02	6	8	7	5	000	3	33.93	0.37
64	2330	6/29	31°33'N	132°17'W	67.0	050	18	67.0	62.0	1020	02	6	8	7	5	040	3	-	-
65	0530	6/30	31°53'N	131°37'W	66.0	050	18	66.0	61.5	1021	02	6	8	6	4	040	3	33.82	0.29
66	1130	6/30	32°14'N	130°58'W	65.9	050	18	65.0	60.2	1020	02	X	X	6	5	XX	4	-	-
67	1730	6/30	32°35'N	130°19'W	65.5	050	18	65.0	59.0	1022	02	6	8	7	5	040	4	33.86	0.42
68	2330	6/30	32°55'N	129°38'W	65.5	010	18	64.5	59.5	1021	02	6	8	7	5	020	4	-	-
69	0530	7/1	33°14'N	128°57'W	64.2	330	15	64.5	59.5	1022	02	6, 8	8	6	5	350	5	33.24	0.45
70	1130	7/1	33°34'N	128°14'W	63.0	340	18	63.0	57.0	1021	02	6, 8	8	7	5	360	4	-	-

Table 4.--Summary of observations at bathythermograph lowerings, John R. Manning cruise 36 (NEPAS) (for coded values see H. O. Pub. 606-c) (cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Barometer, mb.	Weather	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
71	1730	7/1	33°53'N	127°31'W	62.5	350	18	63.0	58.5	1022	02	6	6	8	5	350	4	33.46	0.38
72	2330	7/1	34°15'N	126°47'W	63.5	310	19	64.2	61.3	1021	01	1, 6, 8	3	9	4	020	4	-	-
73	0530	7/2	34°25'N	126°26'W	63.3	350	14	63.5	58.5	1021	01	1, 6, 8	3	9	3	350	1	33.24	0.43
74	1450	7/2	34°26'N	126°32'W	63.0	320	18	62.0	58.0	1021	02	1, 6, 8, 4	5	9	3	010	2	-	1.08
75	1730	7/2	34°35'N	126°10'W	62.5	320	18	62.5	58.0	1021	01	6, 8	4	9	3	010	2	33.21	0.89
76	2330	7/2	34°48'N	125°32'W	61.5	340	18	63.5	59.0	1021	02	6, 8	3	9	3	010	2	-	-
77	0530	7/3	34°58'N	125°15'W	61.5	320	16	61.5	59.0	1020	02	6, 8	3	9	5	310	3	33.48	0.47
78	1130	7/3	34°56'N	126°18'W	61.6	020	20	61.5	57.8	1021	02	6, 8	3	5	5	350	4	-	-
79	1730	7/3	34°56'N	127°06'W	62.5	340	17	64.0	59.5	1024	02	6, 8	3	8	4	010	4	33.04	0.39
80	2330	7/3	34°56'N	127°59'W	64.0	020	20	65.0	61.0	1024	03	6, 8	7	8	5	000	4	-	-
81	0530	7/4	34°57'N	128°52'W	63.1	000	23	63.0	59.0	1024	01	6	5	7	5	000	4	33.75	0.37
82	1130	7/4	34°60'N	129°47'W	64.5	320	20	64.0	58.0	1023	02	6	7	7	4	010	4	-	-
83	1130	7/4	35°02'N	130°41'W	64.5	350	20	64.0	58.5	1024	02	6, 4	7	7	5	010	4	33.66	0.36
84	2330	7/4	35°05'N	131°37'W	64.4	330	18	64.5	60.2	1023	02	6, 4	7	7	5	010	4	-	-
85	0530	7/5	35°08'N	132°23'W	65.5	350	14	64.0	58.5	1024	02	6, 8	8	7	4	020	4	33.89	-
86	1130	7/5	35°32'N	131°46'W	65.0	350	16	63.5	59.0	1022	02	6	8	7	4	010	4	-	-
87	1730	7/5	35°59'N	131°05'W	64.0	330	15	63.5	61.0	1022	46	6, 4	9	3	4	000	4	33.40	0.29
88	2330	7/5	36°23'N	130°33'W	64.5	360	14	64.0	61.0	1021	01	6, 8	5	8	3	010	4	-	-
89	0530	7/6	36°36'N	130°12'W	63.5	310	08	62.5	61.0	1022	03	0, 6	6	5	3	350	1	33.15	0.55
90	1530	7/6	36°42'N	130°14'W	62.6	350	17	62.5	61.0	1023	00	0, 6	7	6	3	350	1	33.08	0.74
91	1730	7/6	36°50'N	129°59'W	63.0	350	13	62.7	60.0	1023	01	8	5	9	2	350	1	33.06	-
92	2330	7/6	37°09'N	129°26'W	63.5	330	18	64.0	61.0	1023	03	6	8	X	X	340	X	-	-
93	0355	7/6	37°20'N	129°10'W	63.0	340	09	63.5	59.0	1023	02	6	7	8	3	200	1	33.37	0.61
94	1800	7/7	37°27'N	129°03'W	63.0	350	10	64.5	61.0	1024	01	8	2	8	3	000	1	33.37	0.56
95	2330	7/7	37°47'N	128°32'W	62.0	350	11	64.5	61.0	1023	02	X	0	9	3	020	1	-	-
96	0530	7/8	38°10'N	127°03'W	62.0	350	10	62.5	57.0	1023	02	X	0	9	3	000	1	32.99	0.24
97	1130	7/8	38°34'N	127°22'W	61.5	350	13	63.5	60.0	1022	02	X	0	9	3	000	1	-	-
98	1730	7/8	38°58'N	126°49'W	61.9	320	15	63.3	60.0	1022	02	8	6	9	3	000	1	32.94	0.36
99	2330	7/8	39°22'N	126°17'W	61.5	340	15	62.5	59.5	1021	02	2	8	9	3	000	4	-	-
100	0530	7/9	39°37'N	125°34'W	59.5	350	18	62.0	59.5	1020	02	0	0	9	3	000	3	33.08	-
101	1130	7/9	39°59'N	124°54'W	52.5	000	14	57.5	55.0	1020	02	0	0	7	3	000	1	-	-
102	1730	7/9	39°59'N	125°46'W	61.5	330	12	63.5	62.0	1021	02	8	5	8	3	310	1	33.01	0.36
103	2330	7/9	39°59'N	126°38'W	62.0	330	09	62.5	60.0	1021	02	6	1	8	3	330	1	-	-
104	0355	7/10	39°60'N	126°51'W	62.4	310	08	64.7	61.5	1020	02	8	1	9	2	310	1	32.99	0.45
105	1500	7/10	40°03'N	126°54'W	62.5	300	12	65.0	63.0	1018	03	6	8	7	3	310	1	-	0.45

Table 4.--Summary of observations at bathythermograph lowerings, John R. Manning cruise 36 (NEPAS) (for coded values see H. O. Pub. 606-c) (cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Barometer, mb.	Weather	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
106	1730	7/10	40°02'N	127°07'W	62.5	300	12	65.5	63.0	1018	02	6	8	7	3	310	1	32.99	-
107	2330	7/10	40°02'N	127°50'W	62.2	280	15	64.2	60.2	1018	01	6	6	8	5	250	3	-	-
108	0530	7/11	40°20'N	128°33'W	63.0	280	15	63.0	59.0	1021	02	6	5	8	4	250	3	32.92	0.46
109	1130	7/11	40°03'N	129°20'W	62.0	340	13	63.0	59.5	1023	02	6	6	8	4	340	4	-	-
110	1730	7/11	40°04'N	130°06'W	62.5	050	06	65.0	58.2	1024	02	1, 4, 6	6	9	3	360	5	33.08	0.51
111	2330	7/11	40°08'N	131°07'W	64.0	100	07	68.5	60.0	1023	02	1, 4, 6	3	9	2	340	1	-	-
112	0530	7/12	40°11'N	131°50'W	63.3	150	10	64.0	60.0	1020	02	6, 1	2	9	3	170	1	33.12	0.39
113	1130	7/12	40°01'N	132°36'W	63.0	140	20	65.0	62.3	1015	00	6	8	8	2	090	2	-	-
114	1730	7/12	39°52'N	133°22'W	63.5	240	10	65.0	63.0	1009	21	6	8	7	3	240	3	33.12	0.36
115	2330	7/12	40°17'N	132°43'W	63.0	180	13	66.0	64.0	1008	02	6	8	7	4	210	4	-	-
116	0530	7/13	40°35'N	132°13'W	62.5	240	11	64.3	62.0	1006	03	6	6	7	5	230	4	33.15	0.68
117	1130	7/13	41°05'N	131°29'W	62.5	240	16	62.5	60.5	1005	02	1, 6, 8	6	7	3	230	2	-	-
118	1730	7/13	41°31'N	130°44'W	62.0	250	05	64.0	60.5	1005	02	5, 6, 8	4	8	4	220	1	32.88	0.96
119	2330	7/13	41°59'N	129°58'W	62.5	240	14	64.2	61.0	1007	02	6, 8	6	8	3	240	2	-	-
120	0530	7/14	42°22'N	129°21'W	61.5	300	18	61.0	58.0	1009	03	6, 8	8	8	3	240	2	32.84	0.38
121	1730	7/14	42°39'N	128°42'W	61.8	290	17	62.0	58.0	1016	01	6	6	8	6	240	5	32.88	0.52
122	2330	7/14	43°04'N	128°09'W	62.5	290	21	62.5	58.0	1020	02	6, 8	5	8	5	260	4	-	-
123	0530	7/15	43°22'N	127°50'W	62.0	280	06	62.0	57.0	1023	02	6, 8	5	8	5	260	5	32.39	0.48
124	1130	7/15	43°49'N	127°07'W	60.0	290	16	59.1	55.1	1022	02	6, 8	4	7	3	260	4	-	-
125	1730	7/15	44°16'N	126°45'W	62.0	320	14	60.0	56.0	1023	02	8	2	9	3	350	1	32.34	0.38
126	2330	7/15	44°50'N	126°15'W	63.0	330	12	65.0	63.5	1026	02	8, 4, 5	5	9	3	260	1	-	-
127	0530	7/16	45°23'N	125°39'W	62.0	340	13	61.5	58.0	1023	02	6, 8	3	7	3	020	1	30.77	0.45
128	1130	7/16	45°45'N	124°42'W	62.5	340	15	60.0	55.0	1022	02	6, 8	4	8	3	010	1	-	-
129	0530	7/23	45°22'N	125°11'W	62.5	330	01	63.5	61.5	1019	02	6	6	8	3	330	1	31.49	0.45
130	1130	7/23	44°49'N	125°59'W	62.5	340	09	62.0	60.0	1021	50	6	6	7	1	280	1	-	-
131	1730	7/23	44°18'N	126°43'W	63.0	340	08	61.0	58.5	1023	21	6	9	6	2	300	1	30.39	0.39
132	2330	7/23	43°51'N	127°22'W	62.5	320	11	63.5	61.5	1025	01	6	6	8	3	320	1	32.84	0.63
133	0530	7/24	43°42'N	127°53'W	61.5	340	09	60.5	56.0	1025	02	8	3	8	3	340	1	32.92	0.74
134	1130	7/24	43°42'N	127°53'W	62.0	320	15	62.5	56.5	1024	02	8	3	8	2	340	1	32.54	0.46
135	1530	7/24	43°43'N	127°51'W	61.5	330	12	61.0	57.0	1024	02	8, 4, 6	5	8	2	340	1	32.70	0.55
136	2330	7/24	43°14'N	127°12'W	63.1	330	12	63.0	57.5	1022	02	8	3	9	3	330	2	-	-
137	0530	7/25	42°51'N	127°51'W	62.0	330	14	62.0	57.0	1021	02	8, 1	3	9	3	340	2	32.61	0.64
138	1130	7/25	42°29'N	128°32'W	XXX	210	13	62.0	58.5	1011	02	8	2	9	3	330	1	33.04	1.07
139	1730	7/25	42°06'N	129°12'W	61.9	320	15	62.5	59.2	1020	03	8, 6, 4	6	9	3	300	2	32.94	0.61
140	2330	7/25	41°38'N	129°55'W	62.5	320	21	62.5	58.5	1021	03	6, 8	6	8	4	300	2	33.10	0.90

Table 4.--Summary of observations at bathythermograph lowerings, John R. Manning cruise 36 (NEPAS) (for coded values see H. O. Pub. 606-c) (cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Baro-meter, mb.	Wea-ther	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
141	0530	7/26	41°13'N	130°27'W	62.0	300	21	61.5	56.5	1024	03	6	8	8	5	300	4	33.01	0.61
142	1130	7/26	40°28'N	130°45'W	62.0	000	18	62.5	55.0	1024	02	6	2	7	5	000	4	32.99	0.55
143	1730	7/26	40°52'N	131°10'W	62.0	000	21	61.0	55.5	1025	02	6	7	5	5	000	4	32.99	2.20
144	2330	7/26	40°03'N	131°19'W	63.0	330	18	64.0	58.5	1025	02	6,8	3	8	5	330	4	33.15	-
145	0530	7/27	39°39'N	131°16'W	62.5	000	16	63.0	59.0	1025	01	6	6	7	5	000	4	33.13	0.53
146	1130	7/27	38°51'N	131°11'W	63.0	000	14	62.5	58.5	1025	02	6	7	8	4	000	4	32.26	0.69
147	1730	7/27	38°18'N	130°53'W	68.5	320	17	63.0	60.5	1024	18	6	7	8	5	000	4	-	0.38
148	2330	7/27	38°26'N	130°17'W	64.0	310	11	65.0	62.2	1023	01	6	6	7	3	350	3	33.10	0.42
149	0530	7/28	38°35'N	129°41'W	63.5	030	16	63.5	61.0	1022	02	6	8	7	4	030	3	33.04	0.30
150	1130	7/28	38°43'N	129°04'W	62.0	330	10	63.0	61.0	1019	01	6	2	7	5	010	3	33.15	-
151	1730	7/28	38°47'N	128°37'W	62.7	330	16	62.0	60.5	1020	50	X	9	3	5	030	3	33.10	0.61
152	2330	7/28	38°49'N	128°40'W	63.0	350	16	63.0	60.5	1019	01	8	5	8	4	330	3	33.12	0.44
153	0400	7/29	38°45'N	128°38'W	62.5	310	15	64.5	61.0	1018	01	8	1	8	3	300	1	33.17	0.45
154	1130	7/29	38°45'N	128°35'W	62.5	200	06	64.0	62.5	1017	00	X	2	6	2	320	1	33.19	0.53
155	1600	7/29	38°46'N	128°37'W	62.8	280	03	62.7	60.5	1017	02	8	7	8	2	300	1	33.10	0.47
156	2330	7/29	38°56'N	127°51'W	63.5	340	11	65.0	62.0	1017	03	6	6	8	3	010	1	33.19	0.63
157	0905	7/30	39°01'N	127°32'W	63.2	330	08	65.0	62.2	1018	01	6,8	7	8	2	290	1	33.10	0.57
158	1130	7/30	39°01'N	127°32'W	62.8	340	17	63.0	58.0	1019	02	8	7	8	3	300	1	32.99	0.44
159	1700	7/30	39°03'N	127°33'W	62.0	010	12	63.5	58.0	1021	02	6	8	8	3	320	1	33.06	0.52
160	2400	7/30	39°01'N	127°22'W	62.8	320	12	63.0	58.0	1020	02	6	6	9	3	320	1	33.37	0.67
161	0530	7/31	39°00'N	127°27'W	62.2	340	20	62.0	57.5	1020	02	6	2	9	3	340	1	33.15	0.61
162	1230	7/31	39°00'N	127°26'W	62.0	330	16	62.5	59.0	1020	02	6	3	9	3	320	1	33.17	-
163	1830	7/31	38°59'N	127°28'W	62.5	350	14	63.0	60.0	1022	02	8	2	9	2	350	1	33.10	0.89
164	2300	7/31	38°59'N	127°28'W	63.0	330	12	65.0	60.0	1022	02	6,8	3	3	3	330	1	33.01	0.82
165	2330	8/2	39°14'N	127°31'W	62.0	340	19	64.0	60.1	1020	03	6	5	8	6	000	6	33.04	1.90
166	0300	8/3	39°02'N	127°31'W	62.6	350	17	63.0	60.0	1019	02	6	4	9	5	000	4	33.01	1.30
167	1730	8/3	38°57'N	127°12'W	59.8	280	09	64.8	61.8	1017	46	2,6	8	6	2	310	1	33.12	3.46
168	2330	8/3	38°54'N	127°04'W	59.8	290	09	64.0	60.5	1016	02	2,6	3	7	3	300	1	33.35	4.92
169	0530	8/4	38°55'N	126°30'W	61.3	300	11	62.0	60.0	1016	36	6	6	7	3	300	1	32.95	2.32
170	1730	8/4	38°56'N	125°42'W	61.8	230	09	63.0	60.5	1014	02	8	1	9	2	270	1	33.21	3.94
171	2330	8/4	38°58'N	126°11'W	61.3	250	11	64.0	61.0	1016	03	8,4,6,8	3	9	6	290	8	-	-
172	0530	8/5	38°50'N	126°36'W	60.5	270	06	63.0	60.5	1016	02	4	2	9	5	300	5	32.94	0.46
173	1130	8/5	38°31'N	126°02'W	61.5	270	11	62.5	59.5	1015	02	4	1	9	4	300	4	32.90	0.78
174	1730	8/5	38°15'N	125°41'W	55.1	310	04	61.0	58.5	1017	03	6	1	9	4	340	5	33.04	-
175	2040	8/5	38°06'N	125°25'W	58.0	270	07	63.0	59.2	1017	01	1,2	6	9	5	300	5	33.33	-

Table 4.--Summary of observations at bathythermograph lowerings, John R. Manning cruise 36 (NEPAS) (for coded values see H. O. Pub. 606-c) (cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Barometer, mb.	Weather	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
176	2330	8/5	38°14'N	125°44'W	56.5	270	09	63.0	59.5	1018	02	6	1	9	5	300	5	33.00	1.16
177	0530	8/6	38°07'N	125°48'W	56.8	250	11	60.5	58.0	1018	03	6,8	5	7	4	300	4	33.39	2.19
178	1130	8/6	37°38'N	125°30'W	60.0	310	11	62.3	60.0	1018	01	6	3	8	3	300	2	33.19	-
179	1730	8/6	37°07'N	125°07'W	60.9	330	09	63.0	60.2	1019	01	6	7	9	2	350	2	33.06	0.61
180	2005	8/6	36°59'N	124°58'W	59.3	320	12	64.0	60.0	1019	02	6	7	9	2	350	2	33.37	-
181	2210	8/6	36°53'N	124°48'W	59.5	300	06	64.5	60.5	1019	02	6	3	9	2	350	2	-	-
182	2330	8/6	36°45'N	124°35'W	60.1	300	06	64.0	60.0	1019	02	6	1	9	2	350	2	33.73	2.40
183	0400	8/7	36°45'N	124°34'W	59.5	300	12	61.1	60.0	1018	02	X	0	9	2	350	2	33.55	1.07
184	1130	8/7	36°42'N	124°29'W	59.0	320	11	60.0	60.0	1017	45	X	0	1	2	320	2	33.49	1.04
185	1730	8/7	36°35'N	124°18'W	60.5	260	06	64.0	63.0	1019	28	6	8	5	2	300	1	33.49	1.93
186	2330	8/7	36°13'N	123°38'W	62.0	300	04	64.5	62.0	1018	03	6	6	6	2	300	1	33.51	0.82
187	0452	8/8	36°09'N	123°29'W	60.2	300	10	63.0	60.1	1017	40	6	8	8	2	300	2	33.62	0.91
188	1130	8/8	36°08'N	123°24'W	60.2	300	08	62.0	59.5	1018	02	6	8	8	2	300	2	34.22	-
189	1600	8/8	36°09'N	123°24'W	60.5	310	12	62.5	59.5	1019	02	6	8	6	2	300	2	33.60	0.97
190	2330	8/8	35°20'N	123°23'W	61.5	320	11	64.8	61.0	1018	02	4,6	5	9	2	320	1	33.60	0.45
191	0530	8/9	34°48'N	123°22'W	61.7	310	18	62.5	59.5	1017	02	6	1	9	2	300	1	34.78	1.04
192	1730	8/9	34°47'N	123°44'W	61.0	320	13	63.0	60.0	1017	03	1,6	2	9	3	320	1	44.04	0.50
193	2200	8/9	34°49'N	124°10'W	63.0	320	16	64.8	61.0	1017	02	8	3	9	3	320	1	33.12	0.50
194	2330	8/9	34°49'N	124°10'W	63.0	320	20	64.2	60.5	1016	02	8	1	9	4	300	1	33.19	0.58
195	0230	8/10	34°48'N	124°11'W	62.5	320	21	63.0	61.0	1015	03	8	8	7	4	300	4	33.26	0.64
196	1130	8/10	34°27'N	125°13'W	62.5	340	22	62.0	59.5	1016	02	6	8	7	5	340	4	33.33	-
197	1730	8/10	34°18'N	126°06'W	63.8	340	20	70.0	60.5	1018	02	8	4	8	4	340	1	33.30	-
198	2330	8/10	34°12'N	126°52'W	65.5	000	19	66.5	61.0	1017	02	6,1	6	8	4	010	1	33.40	0.41
199	0530	8/11	34°04'N	127°37'W	65.0	010	17	65.0	61.2	1017	02	6,8	6	7	4	010	4	33.49	0.66
200	1130	8/11	33°51'N	128°24'W	66.5	000	17	65.0	61.0	1017	02	6,8	4	8	4	000	2	-	-
201	1730	8/11	33°42'N	129°15'W	66.0	020	21	67.5	63.0	1020	02	6,8	8	8	4	000	2	33.49	0.39
202	2330	8/11	33°33'N	130°03'W	66.6	000	12	68.0	63.2	1020	02	6	8	9	3	000	1	33.51	-
203	0530	8/11	33°22'N	130°52'W	67.5	000	12	67.5	63.2	1021	02	6	5	8	3	000	1	-	1.11
204	1130	8/12	33°11'N	131°39'W	68.0	000	12	64.5	64.0	1021	02	6,8	6	8	3	000	1	34.00	-
205	1730	8/12	33°00'N	132°28'W	68.2	040	16	68.5	64.0	1022	02	6	8	9	3	040	1	34.52	0.32
206	2330	8/12	32°39'N	133°07'W	69.0	040	12	69.0	62.7	1022	02	6	5	9	3	040	1	34.76	0.56
207	0530	8/13	32°19'N	133°59'W	68.7	040	12	69.5	64.0	1023	02	8	3	9	3	050	1	34.20	0.45
208	1130	8/13	32°01'N	134°50'W	69.0	050	13	68.5	63.5	1023	02	6	8	8	3	050	1	34.52	-
209	1730	8/13	31°41'N	135°49'W	69.8	040	14	70.0	62.0	1024	03	6	8	7	3	040	1	36.09	-
210	2330	8/13	31°23'N	136°38'W	70.3	040	13	71.5	66.0	1022	01	8,4	2	8	3	030	1	34.90	-

Table 4.--Summary of observations at bathythermograph lowerings, John R. Manning cruise 36 (NEPAS) (for coded values see H. O. Pub. 606-c) (cont'd)

Ser. No.	Time, GCT	Date, 1957	Latitude	Longitude	Bkt. temp., °F.	Wind		Air temp.		Baro-meter, mb.	Wea-ther	Clouds		Visibility	Sea	Swell		Surf. sal., ‰	Surf. PO_4-P, µg at./L.
						Dir., °T.	Force, kt.	Dry bulb, °F.	Wet bulb, °F.			Type	Cover			Dir. °T.	Amt.		
211	0530	8/14	31°00'N	137°31'W	69.2	050	14	70.2	63.1	1023	02	1,4,8	5	7	3	040	2	34.99	-
212	1130	8/14	30°36'N	138°22'W	69.8	040	17	69.8	62.6	1022	02	1,6,8	5	8	3	040	2	35.05	-
213	1830	8/14	30°10'N	139°22'W	70.7	040	09	72.0	64.5	1023	02	3,8,2	6	8	3	040	1	35.21	0.34
214	2330	8/14	29°51'N	140°04'W	71.6	040	09	74.3	65.5	1021	02	4,8	6	9	3	040	2	35.12	-
215	0530	8/15	29°27'N	140°52'W	72.5	040	10	71.0	64.0	1021	02	4,8	6	8	3	040	2	-	-
216	1200	8/15	29°04'N	141°40'W	71.5	070	13	69.7	64.0	1020	02	6,4	6	8	3	040	1	-	-
217	1815	8/15	28°38'N	142°34'W	72.2	070	19	72.5	65.5	1020	02	4,6,8	5	9	3	080	4	35.41	0.25
218	2330	8/15	28°19'N	143°16'W	73.5	020	16	73.0	66.0	1019	02	2,6	6	8	3	020	2	-	-
219	0530	8/16	27°56'N	144°04'W	73.5	070	17	72.5	67.5	1019	02	6,5	5	8	3	100	1	-	-
220	1130	8/16	27°29'N	144°48'W	74.8	080	13	71.2	67.0	1020	03	8	2	8	3	340	2	-	-
221	1830	8/16	26°50'N	145°32'W	73.0	080	14	73.0	67.5	1021	02	8	4	8	3	320	2	-	-
222	2330	8/16	26°36'N	146°17'W	73.5	070	12	74.5	68.0	1020	02	8,5,1	2	8	3	100	1	-	-
223	0530	8/17	26°12'N	147°07'W	74.6	100	14	73.5	69.2	1020	02	8	6	7	3	100	2	-	-
224	1130	8/17	25°52'N	147°58'W	74.0	090	12	73.5	67.0	1020	02	8	5	8	3	090	2	-	-
225	1130	8/17	25°32'N	148°50'W	74.3	070	16	75.3	68.0	1022	02	6,8,5	5	8	4	070	3	-	-
226	2330	8/17	25°11'N	149°41'W	75.4	070	17	78.8	71.0	1021	02	6,8	6	9	4	080	3	-	-
227	0530	8/18	24°47'N	150°29'W	75.0	080	20	74.5	70.0	1021	02	8,4	5	8	3	080	2	-	-
228	1130	8/18	24°23'N	151°19'W	75.0	070	17	74.5	70.5	1021	01	8	2	8	4	010	1	-	-
229	1730	8/18	24°01'N	152°08'W	75.9	070	15	75.8	71.0	1020	02	1,6,8	6	9	3	070	4	-	-
230	2330	8/18	23°39'N	152°56'W	77.5	070	18	78.2	72.8	1019	02	8,6	3	8	3	070	4	-	-
231	0530	8/19	23°13'N	153°42'W	76.0	070	21	76.5	72.0	1018	18	6	6	8	4	070	4	-	-
232	1130	8/19	22°51'N	154°30'W	77.0	070	18	75.5	72.2	1018	02	1,6	2	7	4	070	4	-	-
233	1730	8/19	22°29'N	155°18'W	77.0	070	21	78.4	71.5	1018	02	8,6	3	7	4	070	4	-	-
234	2330	8/19	22°07'N	156°07'W	78.0	070	23	77.5	73.0	1018	02	6,8	6	7	4	070	4	-	-
235	0530	8/20	21°40'N	156°54'W	77.4	090	19	78.0	73.0	1016	03	6,8,1,4	6	7	5	100	4	-	-

Table 5.--Weather observations (USWB 1210-F), Hugh M. Smith cruise 40 (NEPAS)[1/]

Date, 1957	Latitude	Longitude	Time, GCT	Visibility	Wind		Weather		Pressure			Temperature			Clouds						Waves		
					Direction	Speed, kt.	Present	Past	Bar. corr., mb.	Characteristic	Amt. change	Dry bulb, °F.	Wet bulb, °F.	Sea water, °F.	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
7/3	22.6°N	156.6°W	0000	99	02	19	02	2	1019.6	6	1.0	77.9	71.9	76.7	5	5	4	5	0	0	04	3	5
7/3	23.2°N	156.3°W	0600	99	06	22	02	2	1020.7	2	1.4	76.8	70.3	76.3	8	8	4	5	X	X	XX	X	X
7/3	23.6°N	156.0°W	1200	99	07	18	61	X	1019.3	8	1.4	75.5	72.1	78.0	X	X	X	X	X	X	XX	X	X
7/3	24.0°N	155.5°W	1800	99	06	17	02	1	1020.7	2	2.4	77.2	72.8	76.8	2	2	1	5	0	0	06	3	2
7/4	24.6°N	154.8°W	0000	99	06	14	60	0	1019.3	7	0.7	78.8	72.2	76.0	3	2	2	5	0	0	06	2	2
7/4	25.2°N	154.1°W	0600	99	08	16	02	0	1020.3	2	1.7	76.7	71.3	75.8	3	3	2	5	0	0	06	2	2
7/4	25.9°N	153.4°W	1200	99	09	15	02	X	1020.7	7	1.4	75.4	70.6	75.8	X	X	X	X	X	X	XX	X	X
7/4	26.6°N	152.7°W	1800	99	07	11	02	0	1023.0	2	1.4	75.3	70.8	74.8	2	1	2	4	7	0	09	3	2
7/5	26.8°N	152.5°W	0000	99	08	14	02	0	1022.7	2	0.3	78.6	71.8	75.6	3	2	1	4	7	8	04	3	2
7/5	26.4°N	151.8°W	0600	99	09	15	03	1	1024.0	2	2.7	76.0	71.0	75.9	4	4	4	4	0	0	07	3	2
7/5	28.2°N	151.3°W	1200	99	08	15	50	5	1024.7	7	0.3	73.9	69.2	75.1	X	X	X	X	X	X	XX	X	X
7/5	28.9°N	150.8°W	1800	99	07	18	02	1	1026.4	2	2.7	73.8	69.6	74.4	X	2	1	4	0	0	06	3	3
7/6	29.2°N	150.5°W	0000	99	08	14	02	1	1026.2	4	0.2	76.9	70.4	74.2	X	1	1	4	0	0	08	2	2
7/6	30.0°N	150.0°W	0600	99	03	13	50	2	1026.2	2	0.3	72.8	67.2	73.8	8	8	4	4	X	X	07	2	2
7/6	30.7°N	149.4°W	1200	98	07	20	00	2	1025.7	7	1.0	71.8	67.6	72.9	8	8	X	X	X	X	XX	X	X
7/6	31.1°N	149.0°W	1800	99	03	13	02	2	1026.4	2	1.7	72.5	65.3	72.7	8	8	8	4	X	X	03	2	1
7/7	32.1°N	148.4°W	0000	99	06	14	02	2	1026.4	6	0.3	75.5	68.4	73.5	6	5	4	3	2	0	06	3	2
7/7	32.8°N	147.8°W	0600	99	08	07	01	1	1026.4	2	0.3	72.7	68.3	73.0	2	2	2	4	0	0	05	2	2
7/7	33.6°N	147.2°W	1100	98	06	07	01	1	1025.7	8	1.0	70.2	65.6	71.6	2	X	X	X	X	X	XX	X	X
7/7	34.3°N	146.6°W	1800	99	02	08	03	0	1026.1	1	1.0	70.0	65.8	70.9	3	3	2	4	0	0	03	3	1
7/8	35.1°N	146.1°W	0000	99	03	01	02	0	1025.1	8	1.0	74.4	65 6	75.3	1	1	4	5	0	0	02	2	0
7/8	35.8°N	145.6°W	0600	99	25	09	03	0	1024.7	3	0.2	71.3	66.8	71.3	2	2	4	4	0	0	XX	X	X
7/8	36.8°N	144.9°W	1200	99	26	15	02	0	1024.0	7	1.0	69.8	67.7	69.0	2	2	2	4	0	0	XX	X	X
7/8	37.2°N	144.5°W	1800	99	27	10	02	0	1023.4	2	0 7	68.7	66.6	68.3	2	1	1	4	0	5	29	2	2
7/9	38.2°N	143.9°W	0000	99	21	13	03	0	1022.0	7	1.4	71.6	68.8	66.9	3	1	1	4	7	5	23	2	1
7/9	38.8°N	143.1°W	0600	96	25	23	63	1	1018.6	7	1.0	68.1	67.0	66.0	8	8	7	4	X	X	26	5	2
7/9	39.7°N	142.7°W	1200	97	26	23	63	6	1015.6	6	1.7	66.8	65.2	64.5	X	X	X	X	X	X	27	5	2
7/9	40.2°N	142.5°W	1800	99	26	16	01	2	1014.9	4	0.0	63.4	62.2	63.3	7	6	6	4	7	0	24	3	3
7/10	40.7°N	142.0°W	0000	98	03	25	15	5	1016.6	1	1.7	61.7	58.9	62.1	8	8	5	4	0	0	01	3	3
7/10	41.2°N	141.6°W	0600	99	02	21	01	2	1020.0	2	2.7	62.3	60.0	62.4	7	X	X	X	X	X	02	2	4
7/10	41.7°N	141.0°W	1200	98	00	12	01	1	1021.0	8	0.7	57.5	52.2	60.2	3	X	X	X	X	X	XX	X	3
7/10	42.2°N	140.6°W	1800	99	35	14	02	1	1022.7	1	0.9	57.8	55.1	59.0	8	8	5	4	X	X	01	2	3
7/11	43.2°N	139.5°W	0600	99	28	10	03	2	1022.7	2	0.3	57.5	53.6	59.2	8	8	6	4	X	X	33	2	1
7/11	43.8°N	138.7°W	1200	98	25	11	02	2	1020.7	7	1.4	57.7	53.5	57.8	8	8	6	4	X	X	XX	X	X
7/11	44.4°N	138.2°W	1800	99	24	11	02	2	1019.0	7	1.4	58.0	53.0	57.2	8	8	6	4	X	X	35	2	1
7/12	44.8°N	137.7°W	0000	99	16	14	02	2	1016.9	7	1.4	60.1	57.2	57.0	8	8	6	4	X	X	35	3	3
7/12	45.5°N	137.0°W	0600	98	15	14	50	5	1013.5	7	1.4	56.9	56.9	56.9	8	8	6	4	X	X	XX	X	X
7/12	44.4°N	136.9°W	1200	97	08	26	63	6	1006.4	7	3.4	57.0	57.0	57.0	8	8	X	X	X	X	XX	X	X

[1/] All columns in USWB 1210-F are not included here. Those deleted are:

Column	2	Day of week	Column	23	Course of ship
"	3	Octant	"	24	Speed of ship
"	13	Barometer as read	"	31	Diff. sea-air, °F.
"	14	Barometer as corrected	"	32	Dew point, °F.
"	17	Air temperature, °F.			

Table 5.--Weather observations (USWB 1210-F), Hugh M. Smith cruise 40 (NEPAS)(cont'd)

Date, 1957	Latitude	Longitude	Time, GCT	Visibility	Wind		Weather		Pressure			Temperature			Clouds						Waves		
					Direction	Speed, kt.	Present	Past	Bar. corr., mb.	Characteristic	Amt. change	Dry bulb, °F.	Wet bulb, °F.	Sea water, °F.	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
7/12	44.3°N	136.8°W	1800	97	09	26	64	6	1001.0	7	2.4	57.8	57.7	57.3	8	8	7	4	X	X	15	2	4
7/13	43.8°N	136.4°W	0000	98	24	11	02	5	1001.7	2	0.4	59.1	58.5	58.7	8	8	5	4	X	X	18	2	3
7/13	43.1°N	136.2°W	0600	99	31	06	03	5	1002.4	2	1.0	61.3	58.9	59.3	8	8	5	4	X	X	XX	X	X
7/13	42.3°N	135.9°W	1200	98	29	10	02	6	1004.1	2	0.7	61.2	58.2	60.2	8	8	5	4	X	X	XX	X	X
7/13	41.7°N	135.4°W	1800	99	32	22	01	2	1008.5	2	2.4	62.4	57.7	61.1	8	8	5	4	X	X	32	3	4
7/14	40.9°N	134.9°W	0000	99	34	21	01	2	1011.9	2	1.7	62.8	58.0	62.7	5	8	5	4	X	X	33	3	4
7/14	40.6°N	134.7°W	0600	99	29	17	02	1	1015.9	2	2.0	61.8	59.2	62.7	4	4	4	4	0	0	31	4	5
7/14	40.2°N	134.2°W	1200	99	30	06	02	1	1018.3	2	0.7	64.2	59.8	62.9	2	2	4	4	0	0	XX	X	X
7/14	40.5°N	133.6°W	1900	99	32	09	03	1	1022.0	2	2.0	62.1	59.8	62.6	8	8	4	4	X	X	08	3	2
7/15	41.0°N	133.1°W	0000	99	31	09	01	2	1024.0	2	1.0	62.3	56.6	62.3	7	7	4	4	0	0	31	2	2
7/15	41.3°N	133.0°W	0600	99	28	10	02	2	1025.4	2	1.0	60.0	58.8	61.8	7	7	4	4	0	0	28	2	2
7/15	42.2°N	132.1°W	1200	99	31	19	00	X	1026.1	6	0.5	60.6	59.2	61.2	X	X	X	X	X	X	XX	X	X
7/15	42.9°N	131.8°W	1800	99	29	09	02	2	1027.4	2	1.0	58.7	55.4	60.8	8	8	4	4	X	X	31	2	2
7/16	43.4°N	131.3°W	0000	99	33	18	02	2	1027.8	7	0.3	60.0	58.1	60.5	5	5	4	4	0	0	34	2	2
7/16	43.7°N	131.0°W	0600	99	35	16	02	2	1028.1	2	1.0	59.4	58.2	59.8	4	4	4	4	0	0	XX	X	X
7/16	44.3°N	130.5°W	1200	99	35	16	01	1	1028.1	4	0.0	57.9	56.1	58.9	3	3	2	4	0	0	XX	X	X
7/16	44.6°N	130.2°W	1800	99	36	20	03	1	1029.1	2	0.7	58.9	57.1	58.6	8	7	4	4	6	0	36	2	2
7/17	45.0°N	129.8°W	0000	99	29	26	01	2	1029.1	8	1.0	59.3	51.4	58.8	5	3	2	4	6	0	30	2	1
7/17	45.2°N	129.2°W	0600	99	34	24	02	2	1028.8	2	0.3	58.8	57.6	60.2	6	6	2	4	0	0	34	2	3
7/17	45.5°N	128.3°W	1200	99	35	18	02	2	1026.8	6	0.3	58.2	57.0	61.0	8	8	4	3	X	X	35	2	3
7/17	45.7°N	127.4°W	1900	99	33	19	02	2	1025.1	8	1.0	59.7	56.4	61.3	7	5	2	4	6	0	35	2	3
7/18	45.8°N	126.6°W	0000	99	34	20	01	2	1023.0	7	1.4	60.2	57.3	60.1	7	6	2	4	6	0	34	2	4
7/18	45.8°N	126.1°W	0600	99	34	19	01	2	1021.3	8	1.0	60.7	58.3	61.7	4	4	2	4	0	0	34	2	4
7/18	46.3°N	125.5°W	1200	99	32	20	01	2	1019.0	7	0.7	59.9	58.0	60.5	3	3	4	4	0	0	34	2	4
7/22	47.0°N	125.8°W	1800	98	21	06	02	2	1016.9	1	0.7	59.4	56.2	61.1	8	8	5	3	X	X	33	2	1
7/23	47.0°N	126.6°W	0000	99	25	13	02	2	1016.6	3	0.3	62.8	60.3	61.8	6	5	5	3	0	0	31	2	1
7/23	47.0°N	127.0°W	0600	99	28	15	02	X	1019.0	2	2.0	60.5	57.2	61.2	X	X	X	X	X	X	XX	X	X
7/23	47.0°N	127.1°W	1200	99	28	05	01	5	1022.7	2	1.4	60.2	59.1	60.9	6	5	2	3	0	1	28	2	1
7/23	47.0°N	127.8°W	1900	99	27	09	01	1	1024.7	2	1.7	62.0	58.8	61.2	3	2	2	3	0	0	27	2	1
7/24	47.0°N	128.3°W	0000	99	27	07	01	0	1025.7	1	0.7	61.7	60.2	60.3	2	2	2	4	0	0	27	3	2
7/24	47.0°N	128.9°W	0600	99	27	04	01	1	1025.7	0	0.2	59.0	58.5	59.2	3	1	1	4	2	0	27	3	1
7/24	47.0°N	129.1°W	1200	99	27	10	01	1	1025.4	4	0.0	59.0	56.8	58.8	3	2	1	4	X	X	27	3	1
7/24	46.9°N	130.0°W	1800	99	25	10	02	1	1024.7	6	0.3	60.3	59.7	58.7	8	8	6	4	X	X	26	3	2
7/25	46.7°N	130.7°W	0000	99	24	12	02	2	1023.7	7	0.7	60.0	58.5	59.0	8	4	8	5	3	X	28	3	2
7/25	46.8°N	131.1°W	0600	99	20	13	02	X	1020.0	6	0.4	61.8	60.2	59.0	X	X	X	X	X	X	XX	X	X
7/25	46.8°N	131.1°W	1300	99	28	19	02	2	1017.6	5	1.0	59.1	58.3	58.7	5	5	2	4	0	0	28	2	3
7/25	46.8°N	131.8°W	1800	99	30	20	02	2	1020.3	1	1.4	59.9	57.0	58.1	6	4	2	4	5	0	28	3	3
7/26	46.8°N	132.8°W	0000	99	28	26	03	1	1022.4	2	0.7	59.8	56.2	58.5	6	4	2	4	5	0	28	3	3
7/26	46.9°N	133.2°W	0600	99	28	10	01	2	1022.4	1	0.5	57.8	55.0	57.7	5	5	2	4	5	0	28	2	3
7/26	47.0°N	134.0°W	1200	97	26	20	XX	2	1021.7	6	0.3	55.0	54.2	57.3	8	8	7	4	X	X	26	2	3
7/26	46.6°N	133.5°W	1900	97	16	24	XX	6	1018.6	4	0.0	60.0	59.5	57.9	8	8	7	4	X	X	23	2	3
7/27	46.5°N	132.5°W	0000	97	24	26	52	6	1018.0	6	0.3	62.1	62.1	59.4	8	8	7	4	X	X	24	2	3
7/27	46.2°N	131.8°W	0600	96	25	20	65	6	1018.3	2	0.7	60.2	60.2	58.2	8	8	X	0	X	X	XX	X	X
7/27	46.2°N	130.4°W	1800	97	25	16	42	4	1018.3	3	0.2	61.8	60.5	59.0	7	7	X	0	X	X	27	4	4
7/28	46.1°N	129.8°W	0000	98	22	14	03	2	1018.6	1	0.2	63.8	63.2	60.3	8	8	6	3	X	X	26	4	4
7/28	46.0°N	129.1°W	0600	96	22	18	45	4	1018.6	3	0.2	62.0	62.0	60.4	9	X	X	0	X	X	25	4	3
7/28	46.0°N	129.0°W	1200	97	23	20	45	4	1015.6	6	1.0	62.6	62.2	60.3	9	X	X	0	X	X	23	2	2
7/28	46.0°N	127.8°W	1800	97	22	18	45	4	1015.9	4	0.0	63.0	63.0	61.0	9	X	X	0	X	X	26	3	3
7/29	45.7°N	127.2°W	0000	96	24	11	XX	X	1015.9	2	0.7	63.2	63.2	62.5	9	8	6	X	X	X	26	3	3
7/29	45.2°N	126.8°W	0600	97	33	10	20	5	1017.3	2	0.7	62.0	62.0	63.2	8	8	6	2	X	X	26	3	3

Table 5.--Weather observations (USWB 1210-F), Hugh M. Smith cruise 40 (NEPAS)(cont'd)

Date, 1957	Latitude	Longitude	Time, GCT	Visibility	Wind		Weather		Pressure			Temperature			Clouds						Waves		
					Direction	Speed, kt.	Present	Past	Bar. corr., mb.	Characteristic	Amt. change	Dry bulb, °F.	Wet bulb, °F.	Sea water, °F.	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
7/29	45.3°N	127.0°W	1200	97	33	12	00	2	1017.3	4	0.0	61.1	59.8	63.0	8	8	6	2	X	X	26	3	2
7/29	44.5°N	126.1°W	1800	99	35	15	03	1	1018.0	2	0.3	63.4	62.0	64.6	5	5	6	2	0	0	26	3	2
7/30	44.1°N	125.6°W	0000	99	34	15	03	2	1018.3	4	0.0	64.3	60.3	64.4	7	6	6	4	6	0	28	3	3
7/30	44.0°N	125.3°W	0600	99	33	17	02	2	1018.3	1	0.5	62.6	61.0	60.8	7	7	2	X	X	X	28	2	2
7/30	43.7°N	125.5°W	1300	99	33	07	02	2	1018.0	3	0.0	61.5	60.8	60.2	4	4	2	2	X	X	28	2	2
7/30	43.5°N	125.7°W	1800	99	35	08	01	0	1019.6	1	0.7	67.1	63.8	59.0	2	1	1	5	8	0	29	3	2
7/31	43.3°N	126.3°W	0000	99	33	12	03	0	1020.7	4	0.0	65.1	62.5	64.3	4	3	2	5	1	0	33	3	2
7/31	43.0°N	126.8°W	0600	99	33	14	02	0	1021.3	3	0.7	62.9	60.7	64.0	3	3	2	5	0	0	31	3	2
7/31	42.7°N	127.6°W	1800	99	35	18	02	1	1023.7	2	1.4	66.3	62.9	63.5	6	5	2	4	2	0	34	2	2
8/1	42.4°N	128.5°W	0000	99	34	14	03	0	1024.7	2	0.3	64.7	62.5	63.6	2	2	2	3	X	X	34	3	1
8/1	42.3°N	129.0°W	0600	99	36	17	02	1	1026.8	2	1.7	62.5	61.0	62.6	6	6	2	4	0	0	35	3	1
8/1	42.2°N	129.1°W	1200	99	36	14	03	X	1026.1	6	0.3	63.9	61.1	62.5	6	5	5	5	2	0	36	2	1
8/1	42.0°N	129.9°W	1800	99	35	15	02	1	1027.4	2	1.0	63.8	61.8	62.7	6	5	5	5	2	0	02	2	1
8/2	41.7°N	130.5°W	0000	99	36	13	02	1	1027.4	7	0.7	64.8	60.2	63.4	2	2	1	5	0	0	01	2	2
8/2	41.6°N	131.0°W	0600	99	33	10	02	1	1027.8	3	0.3	62.8	60.2	63.2	6	6	1	5	0	0	01	2	2
8/2	41.5°N	130.7°W	1300	99	32	11	02	1	1026.1	7	1.0	62.6	61.3	63.0	1	1	X	5	X	X	01	2	2
8/2	41.4°N	129.7°W	1800	99	32	10	02	0	1025.4	4	0.0	63.3	60.8	62.8	2	2	2	5	0	0	02	2	1
8/3	41.3°N	129.0°W	0000	99	28	14	03	0	1022.7	6	1.5	63.9	61.0	63.8	8	8	5	4	X	X	01	2	1
8/3	41.3°N	128.4°W	0600	99	28	12	02	2	1020.7	7	1.4	63.0	61.9	63.0	8	8	5	4	X	X	34	2	1
8/3	41.3°N	128.2°W	1300	97	23	16	51	2	1014.9	6	1.4	65.7	65.7	62.7	9	9	X	0	X	X	22	2	1
8/3	41.2°N	127.0°W	1800	99	29	18	03	2	1015.6	4	0.0	64.0	62.1	62.6	7	7	5	4	0	0	26	3	2
8/4	41.1°N	126.7°W	0000	99	26	12	02	2	1014.9	7	0.7	66.2	63.8	59.6	2	2	5	4	X	X	26	3	2
8/4	41.0°N	126.0°W	0600	97	24	10	02	1	1014.2	2	0.3	64.9	63.3	60.3	9	X	X	X	X	X	XX	X	X
8/4	40.8°N	125.7°W	1300	99	22	10	00	X	1012.9	5	0.3	61.7	61.3	59.6	2	1	3	X	0	4	28	3	2
8/5	40.6°N	125.6°W	0000	99	20	13	01	6	1013.9	7	0.7	61.4	59.8	60.4	2	2	2	5	6	0	28	3	5
8/5	40.5°N	126.1°W	0600	99	22	12	00	X	1014.6	1	1.0	61.3	60.1	59.7	X	X	X	X	X	X	XX	X	X
8/5	40.3°N	126.4°W	1300	98	23	11	00	X	1014.6	4	0.0	61.9	60.4	59.7	X	X	X	X	X	X	XX	X	X
8/5	40.2°N	127.3°W	1800	99	30	13	02	2	1016.9	2	1.4	60.9	59.6	59.6	6	4	2	5	7	0	29	5	4
8/6	40.2°N	127.7°W	0000	99	31	15	02	2	1018.0	5	0.0	64.9	60.9	63.1	7	4	4	4	7	0	29	3	4
8/6	40.2°N	127.0°W	0600	99	32	14	02	2	1019.3	1	1.0	63.5	61.0	63.1	8	X	X	X	X	X	31	3	3
8/6	39.9°N	128.5°W	1300	98	24	10	50	5	1018.3	7	0.3	62.4	60.7	63.3	8	8	6	4	X	X	29	2	2
8/6	39.8°N	129.4°W	1900	97	27	10	15	5	1018.6	4	0.0	64.2	62.9	63.5	8	8	7	3	X	X	28	2	2
8/7	39.7°N	129.9°W	0000	97	30	15	02	2	1019.0	4	0.0	67.8	63.4	63.8	7	7	7	3	0	0	28	2	2
8/7	39.5°N	130.6°W	0600	98	30	15	02	2	1019.3	2	0.7	65.4	62.8	64.4	X	X	X	X	X	X	XX	X	X
8/7	39.5°N	131.0°W	1200	97	30	14	00	6	1019.3	4	0.0	63.6	60.2	63.9	X	X	X	X	X	X	XX	X	X
8/7	39.4°N	130.1°W	1900	98	30	11	02	2	1020.0	2	0.7	65.8	62.7	63.9	8	8	7	3	X	X	33	2	2
8/8	39.2°N	129.2°W	0000	99	35	04	01	5	1020.0	6	0.3	67.1	64.2	64.0	6	5	2	4	0	9	29	2	2
8/8	39.2°N	128.8°W	0600	99	31	14	02	2	1020.3	3	0.7	64.3	62.5	63.9	4	4	2	4	0	0	XX	X	X
8/8	39.1°N	128.7°W	1300	98	00	05	02	2	1020.3	4	0.0	63.0	59.8	63.6	X	X	X	X	X	X	XX	X	X
8/8	40.0°N	127.7°W	1800	99	31	10	02	5	1021.7	2	1.0	63.7	62.0	63.7	7	7	2	4	0	0	32	2	1
8/9	39.0°N	127.4°W	0100	99	35	09	01	1	1021.0	7	1.0	64.8	60.8	64.2	2	2	2	4	0	0	32	2	1
8/9	39.0°N	126.9°W	0700	99	33	08	02	0	1020.3	8	0.3	63.0	59.8	61.7	1	X	X	X	X	X	33	3	2
8/9	39.0°N	127.0°W	1200	99	29	10	02	1	1018.6	7	0.7	62.6	59.3	62.3	8	8	6	4	X	X	29	2	2
8/9	39.0°N	126.2°W	1800	99	36	13	28	2	1019.0	3	0.5	61.5	59.9	62.7	8	8	6	4	X	X	32	2	2
8/10	39.1°N	125.3°W	0000	99	31	15	01	1	1018.3	7	1.0	64.2	62.2	62.8	2	2	6	4	0	0	34	2	2
8/10	38.9°N	124.4°W	0600	98	30	15	00	X	1016.6	8	0.5	59.2	57.4	56.2	X	X	X	X	X	X	XX	X	X
8/10	38.9°N	124.2°W	1200	99	33	18	02	0	1014.9	6	1.4	58.9	57.1	56.1	1	1	1	4	0	0	33	2	2
8/10	38.7°N	125.3°W	1900	99	31	16	02	0	1016.6	2	0.3	64.8	60.2	57.6	1	1	1	4	0	0	33	2	2
8/11	38.5°N	125.5°W	0000	99	34	20	03	0	1016.6	6	0.3	64.1	59.9	62.6	5	5	1	4	0	0	32	2	3
8/11	38.4°N	126.1°W	0600	99	33	22	02	1	1017.3	0	0.7	62.8	59.2	62.7	2	2	1	4	0	0	33	2	4

Table 5. -- Weather observations (USWB 1210-F), Hugh M. Smith cruise 40 (NEPAS)(cont'd)

Date, 1957	Latitude	Longitude	Time, GCT	Visibility	Wind		Weather		Pressure			Temperature			Clouds						Waves		
					Direction	Speed, kt.	Present	Past	Bar. corr., mb.	Characteristic	Amt. change	Dry bulb, °F.	Wet bulb, °F.	Sea water, °F.	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
8/11	38.4°N	126.8°W	1300	99	02	16	02	0	1017.3	2	0.3	63.8	60.3	61.2	3	3	1	4	0	0	32	2	4
8/11	38.2°N	127.6°W	1800	99	36	12	02	0	1019.3	1	0.7	65.3	61.7	63.8	3	3	1	4	0	0	36	2	2
8/12	37.9°N	128.3°W	0000	99	34	15	02	0	1020.7	6	0.2	64.9	60.8	64.0	3	2	2	4	0	1	34	2	2
8/12	37.8°N	129.0°W	0600	99	33	15	02	0	1022.0	1	1.7	63.8	59.8	64.1	2	2	4	4	0	0	31	2	2
8/12	37.5°N	129.1°W	1200	99	34	15	02	1	1023.0	2	0.3	65.3	61.1	65.4	8	8	6	4	X	X	XX	X	X
8/12	37.4°N	129.7°W	1800	99	36	13	02	2	1024.4	1	0.2	65.0	59.9	65.1	8	8	5	3	X	X	36	2	0
8/13	37.1°N	128.9°W	0000	99	35	14	02	2	1023.4	7	1.0	66.4	62.0	64.3	8	8	5	3	X	X	36	2	0
8/13	37.2°N	128.5°W	0600	99	36	24	02	2	1024.0	2	1.0	64.3	60.0	64.2	8	8	6	4	X	X	XX	X	X
8/13	37.0°N	128.2°W	1300	99	35	17	02	2	1022.7	7	0.5	64.7	59.0	64.2	8	8	6	4	X	X	XX	X	X
8/13	37.1°N	127.6°W	1900	99	02	29	02	2	1022.7	0	0.3	64.4	60.4	63.8	8	8	6	4	X	X	36	2	2
8/14	37.0°N	127.1°W	0000	99	35	21	01	1	1021.0	7	1.4	63.7	60.3	63.4	1	1	1	4	0	0	36	2	3
8/14	36.9°N	126.6°W	0600	99	33	20	02	0	1020.3	1	0.3	62.9	60.8	63.4	1	1	1	4	0	0	XX	X	X
8/14	36.8°N	125.3°W	1300	99	32	20	02	1	1018.6	7	0.7	62.8	58.0	62.8	7	7	1	4	0	0	XX	X	X
8/14	37.0°N	125.6°W	1900	99	33	19	02	2	1019.3	0	0.0	63.1	59.6	62.6	6	6	1	4	0	0	01	2	4
8/15	37.1°N	125.2°W	0100	99	34	16	02	1	1016.6	7	1.4	62.8	59.5	60.3	0	0	0	9	0	0	35	2	3
8/15	38.5°N	125.9°W	0600	99	32	17	02	0	1017.6	0	0.3	61.1	59.2	59.8	0	0	0	9	0	0	XX	X	X
8/15	37.5°N	123.5°W	1200	98	32	23	00	X	1015.9	0	0.0	58.3	56.4	57.9	X	X	X	X	X	X	XX	X	X
8/27	36.8°N	122.4°W	0600	98	32	15	00	1	1020.3	1	0.7	58.1	56.3	59.4	X	X	X	X	X	X	XX	X	X
8/27	35.5°N	122.1°W	1200	98	32	18	00	0	1019.6	5	0.0	59.8	57.0	56.5	X	X	X	X	X	X	XX	X	X
8/27	35.4°N	123.0°W	1800	98	35	24	03	1	1022.0	2	1.7	61.5	58.2	58.2	6	0	0	9	7	1	35	3	3
8/28	35.0°N	123.4°W	0000	98	36	22	01	1	1020.7	7	1.7	64.8	60.6	62.5	1	1	4	3	0	0	34	3	3
8/28	34.5°N	124.5°W	0600	98	34	20	00	1	1021.0	3	0.5	63.8	59.7	64.0	X	X	X	X	X	X	XX	X	X
8/28	34.0°N	125.7°W	1300	98	34	20	00	X	1021.0	3	0.2	64.0	58.8	64.0	2	X	X	X	X	X	XX	X	X
8/28	33.6°N	126.5°W	1900	99	32	16	02	0	1021.3	0	0.3	68.3	61.8	66.1	2	2	2	3	X	X	32	2	2
8/29	33.2°N	128.0°W	0500	99	33	08	02	X	1020.3	1	0.7	66.1	61.3	66.3	X	X	X	X	X	X	XX	X	X
8/29	32.6°N	129.2°W	1300	99	31	07	00	X	1019.3	6	0.7	66.0	61.2	67.2	X	X	X	X	X	X	XX	X	X
8/29	32.3°N	129.9°W	1700	99	34	05	03	0	1020.0	2	0.7	69.0	63.0	68.3	2	2	4	4	0	0	34	2	0
8/30	32.0°N	131.0°W	0100	99	32	04	02	0	1019.0	6	0.7	71.5	64.0	71.0	1	1	4	4	0	0	01	2	0
8/30	31.9°N	131.7°W	0500	99	27	05	00	X	1020.3	3	1.0	70.5	64.0	71.1	X	X	X	X	X	X	XX	X	X
8/30	31.2°N	133.1°W	1300	98	27	14	00	1	1019.3	6	0.7	72.0	67.4	70.4	8	X	X	X	X	X	XX	X	X
8/30	30.9°N	133.8°W	1700	99	27	08	03	1	1021.0	2	1.2	72.0	67.6	70.2	4	2	2	5	3	1	34	3	0
8/31	30.5°N	135.0°W	0100	99	28	12	02	2	1021.0	6	0.3	74.3	69.0	71.1	7	2	2	5	7	0	32	3	2
8/31	30.6°N	135.5°W	0500	99	28	09	00	1	1021.0	3	0.9	72.5	68.0	71.4	X	X	X	X	X	X	32	3	1
8/31	29.9°N	136.5°W	1300	99	30	11	00	X	1021.7	6	0.3	71.1	67.0	71.2	X	X	X	X	X	X	XX	X	X
8/31	29.0°N	138.9°W	1800	99	28	08	03	0	1023.0	2	0.9	72.9	68.4	72.3	4	3	4	5	2	0	30	3	1
9/1	28.7°N	139.6°W	0600	97	33	07	21	6	1024.0	2	1.0	73.7	69.0	73.3	8	8	X	X	X	X	XX	X	X
9/1	28.1°N	141.0°W	1300	98	35	06	00	1	1022.4	7	0.7	73.4	69.4	73.7	X	X	X	X	X	X	XX	X	X
9/1	28.0°N	141.5°W	1800	99	03	07	03	1	1023.4	2	0.9	74.9	69.1	73.2	4	3	2	3	2	0	07	2	1
9/2	27.5°N	142.7°W	0100	99	05	10	02	1	1021.3	7	1.7	76.8	70.0	74.1	4	3	4	3	2	0	13	3	1
9/2	27.2°N	143.5°W	0600	99	05	10	00	1	1022.0	3	0.9	74.0	69.9	74.1	X	X	X	X	X	X	13	2	1
9/2	26.6°N	144.8°W	1300	99	10	08	00	2	1020.7	7	1.2	73.8	68.4	73.7	8	X	X	X	X	X	XX	X	X
9/2	26.5°N	145.0°W	1800	98	05	05	20	6	1021.7	1	1.4	74.0	69.3	73.4	6	4	2	3	1	4	15	2	3
9/3	26.0°N	146.4°W	0100	99	25	10	02	1	1019.3	7	1.4	75.0	69.3	75.4	5	4	2	3	1	4	10	2	3
9/3	25.7°N	147.2°W	0600	99	07	12	00	X	1020.0	3	1.0	73.8	69.9	74.2	X	X	X	X	X	X	XX	X	X
9/3	25.1°N	148.5°W	1300	98	10	13	00	X	1018.6	7	2.0	74.4	70.8	75.3	X	X	X	X	X	X	XX	X	X
9/3	24.8°N	149.0°W	1800	96	10	18	14	2	1019.3	2	0.9	73.8	71.3	75.5	8	7	7	3	0	1	14	4	3
9/4	24.4°N	150.1°W	0100	97	07	09	15	2	1017.6	7	1.4	77.5	71.9	76.6	7	5	9	3	2	1	13	4	2
9/4	24.0°N	151.8°W	0600	99	10	07	00	2	1019.0	3	1.4	75.5	71.6	76.0	6	X	X	X	X	X	13	4	2
9/4	23.7°N	151.7°W	1200	99	10	13	50	2	1017.6	7	1.7	72.7	71.0	75.9	X	X	X	X	X	X	13	4	2
9/4	23.4°N	152.6°W	1800	98	07	14	15	X	1018.0	2	0.9	76.5	73.0	76.7	6	4	4	4	0	4	07	3	2

Table 5.--Weather observations (USWB 1210-F), Hugh M. Smith cruise 40 (NEPAS)(cont'd)

Date, 1957	Latitude	Longitude	Time, GCT	Visibility	Wind		Weather		Pressure			Temperature			Clouds						Waves		
					Direction	Speed, kt.	Present	Past	Bar. corr., mb.	Characteristic	Amt. change	Dry bulb, °F.	Wet bulb, °F.	Sea water, °F.	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
9/4	23.1°N	153.5°W	2300	98	04	07	50	X	1016.9	7	1.7	77.0	73.3	76.8	8	6	4	4	0	4	07	3	2
9/5	22.6°N	154.5°W	0600	98	06	07	02	2	1016.6	3	1.0	77.9	72.4	76.8	7	6	X	X	X	X	06	2	0
9/5	22.3°N	155.3°W	1100	98	09	15	20	1	1015.9	8	1.2	76.4	72.4	76.9	2	X	X	X	X	X	XX	X	X
9/5	22.0°N	155.9°W	1500	98	09	16	00	X	1014.6	6	1.4	76.4	70.8	77.3	X	X	X	X	X	X	XX	X	X
9/5	21.7°N	156.5°W	1800	99	09	18	03	2	1015.9	2	1.0	77.8	72.9	76.8	8	1	1	3	0	4	09	2	2

Table 6.--Weather observations (USWB 1210-F), John R. Manning cruise 36 (NEPAS)[1/]

Date, 1957	Latitude	Longitude	Time, GCT	Visibility	Wind		Weather		Pressure			Temperature			Clouds						Waves		
					Direction	Speed, kt.	Present	Past	Bar. corr., mb.	Characteristic	Amt. change	Dry bulb, °F.	Wet bulb, °F.	Sea water, °F.	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
6/12	21.3°N	157.6°W	0600	99	06	18	02	0	1017.3	X	XX	77.2	72.0	76.5	2	2	2	5	0	0	06	2	4
6/12	22.4°N	156.5°W	1800	99	08	17	02	2	1019.6	2	1.0	77.0	70.2	76.5	6	4	4	4	0	0	09	3	3
6/12	22.7°N	156.0°W	2300	99	09	22	02	1	1020.3	0	0.0	80.0	72.0	76.5	2	2	1	5	5	0	09	2	3
6/13	23.2°N	155.8°W	0600	99	09	18	02	0	1020.7	3	1.4	78.0	72.0	76.5	2	1	1	5	5	0	09	3	3
6/13	23.8°N	155.3°W	1200	98	08	16	00	0	1021.0	0	1.0	76.7	72.0	76.0	8	8	5	4	X	X	09	3	3
6/13	24.3°N	154.7°W	1800	99	10	20	03	2	1021.7	2	0.7	76.3	72.0	76.0	6	6	5	5	1	8	09	3	5
6/13	24.8°N	154.2°W	2300	99	09	19	02	2	1021.7	4	0.0	79.0	74.0	76.5	7	7	1	5	1	8	09	3	5
6/14	25.3°N	153.7°W	0600	99	08	17	01	1	1022.0	2	1.0	76.0	71.5	76.0	3	3	5	5	7	1	09	3	4
6/14	25.8°N	153.2°W	1200	99	09	15	01	0	1022.4	7	0.9	75.1	70.0	75.5	5	5	5	5	7	1	09	3	4
6/14	26.5°N	152.5°W	1800	99	08	16	03	1	1022.7	2	1.0	76.5	71.0	75.0	3	3	4	5	X	X	11	3	3
6/14	27.0°N	152.1°W	2300	99	09	12	01	0	1022.4	0	0.7	76.5	71.0	75.5	2	2	4	5	5	1	09	3	3
6/15	27.4°N	151.6°W	0600	99	09	15	03	1	1021.7	2	XX	75.5	70.0	75.5	5	5	4	5	0	1	11	2	3
6/15	27.9°N	151.1°W	1200	98	07	11	02	1	1021.3	X	XX	74.0	70.0	75.2	3	3	2	3	0	0	07	2	2
6/15	28.4°N	150.5°W	1800	99	09	14	02	0	1021.0	1	0.5	76.0	70.5	75.0	2	2	4	5	5	4	09	2	2
6/15	29.2°N	149.9°W	2300	99	09	15	02	1	1020.7	0	0.0	76.0	69.0	75.0	5	5	4	5	5	1	09	2	3
6/16	29.7°N	149.2°W	0600	99	09	12	01	1	1020.3	2	0.9	74.5	68.0	74.0	1	1	4	5	4	1	09	2	2
6/16	30.2°N	148.5°W	1200	98	09	04	02	1	1019.6	7	1.0	72.0	66.0	73.2	6	6	2	4	0	0	09	2	1
6/16	30.9°N	148.0°W	1800	99	07	05	02	1	1021.7	2	1.9	73.8	67.0	73.3	2	0	0	9	1	0	09	2	2
6/16	31.4°N	147.4°W	2300	99	07	07	02	0	1022.4	2	0.5	75.0	68.0	74.5	1	1	5	5	1	0	07	2	2
6/17	32.0°N	146.7°W	0600	99	08	10	03	1	1022.7	2	1.0	74.0	68.0	73.8	7	4	1	5	2	4	07	2	2
6/17	32.6°N	146.2°W	1200	97	13	04	02	2	1024.0	2	0.7	71.0	68.2	70.4	7	0	0	9	1	5	06	3	2
6/17	33.1°N	145.7°W	1800	98	00	05	02	1	1025.7	2	0.9	71.8	69.5	69.3	6	0	0	9	4	0	16	3	2
6/17	33.9°N	145.1°W	2300	99	14	02	02	1	1025.7	8	0.7	73.0	67.1	73.0	6	3	1	3	1	8	00	2	2
6/18	34.3°N	144.4°W	0600	98	16	05	01	1	1025.7	0	1.0	72.0	67.0	70.3	3	2	1	3	2	1	49	2	2
6/18	35.0°N	143.9°W	1200	98	23	05	02	0	1025.7	8	1.0	69.8	67.1	69.0	3	3	2	3	0	0	49	2	2
6/18	35.6°N	143.3°W	1800	98	23	11	02	1	1024.7	4	0.0	67.1	66.2	67.0	5	5	4	3	1	4	30	2	2
6/18	36.0°N	143.0°W	2300	99	23	12	02	2	1024.4	7	0.7	69.3	67.0	66.3	7	7	5	3	1	0	24	3	3
6/19	36.2°N	143.0°W	0600	98	25	13	02	2	1023.0	0	0.0	66.6	64.5	65.5	8	8	6	3	X	X	25	3	3
6/19	36.2°N	143.0°W	1100	98	26	18	02	2	1022.7	7	0.7	65.5	63.5	65.5	8	8	6	3	X	X	27	2	2
6/19	36.3°N	142.7°W	1800	98	31	15	02	2	1023.7	2	1.0	66.0	64.0	65.5	8	8	6	3	X	X	30	3	3
6/19	36.7°N	141.9°W	2300	99	16	12	02	2	1024.7	7	0.3	60.0	59.0	63.9	7	7	6	4	0	0	16	4	5
6/20	36.9°N	141.8°W	0500	98	36	16	02	2	1025.7	2	1.0	62.0	58.5	63.6	8	8	6	4	X	X	35	2	2
6/20	36.9°N	141.8°W	1200	98	23	12	02	2	1026.1	0	0.0	62.5	56.0	63.0	8	8	5	3	X	X	33	3	3
6/20	37.4°N	141.0°W	2300	98	04	12	02	2	1026.8	2	0.7	63.0	56.0	63.8	8	8	5	3	X	X	02	3	2
6/21	38.0°N	140.1°W	0600	98	04	04	02	2	1026.4	2	0.7	62.0	55.5	63.0	8	8	5	3	X	X	02	3	2
6/21	38.6°N	139.4°W	1200	97	12	05	02	2	1025.1	7	0.7	59.9	53.7	62.0	8	8	5	3	X	X	05	3	2
6/21	38.9°N	139.2°W	1700	98	00	00	02	2	1025.7	2	0.3	60.0	54.0	62.0	8	8	5	3	X	X	01	2	2
6/21	39.3°N	138.6°W	2300	98	16	11	02	2	1024.7	7	1.7	62.5	57.5	61.5	8	8	5	3	X	X	35	2	2
6/22	39.7°N	138.2°W	0600	98	19	13	02	2	1023.4	0	0.0	61.1	56.2	61.0	7	7	5	3	0	0	19	2	2
6/22	39.7°N	138.2°W	1100	98	18	14	02	2	1021.7	7	1.0	61.0	56.3	61.5	8	8	5	3	X	X	20	2	2

[1/] All columns in USWB 1210-F are not included here. Those deleted are:

Column 2 Day of week
" 3 Octant
" 13 Barometer as read
" 14 Barometer as corrected
" 17 Air temperature, °F.
Column 23 Course of ship
" 24 Speed of ship
" 31 Diff. sea-air, °F.
" 32 Dew point, °F.

Table 6.--Weather observations (USWB 1210-F), John R. Manning cruise 36 (NEPAS) (cont'd)

Date, 1957	Latitude	Longitude	Time, GCT	Visibility	Wind		Weather		Pressure			Temperature			Clouds						Waves		
					Direction	Speed, kt.	Present	Past	Bar. corr., mb.	Characteristic	Amt. change	Dry bulb, °F.	Wet bulb, °F.	Sea water, °F.	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
6/22	39.8°N	138.0°W	1700	98	24	10	02	2	1022.0	2	0.7	63.0	58.5	61.5	8	8	5	3	X	X	25	1	3
6/22	40.8°N	136.5°W	2300	99	22	11	02	2	1022.0	7	0.7	65.7	60.2	60.4	7	7	5	3	0	0	22	1	2
6/23	40.9°N	136.5°W	0500	98	24	15	50	2	1022.7	2	1.0	60.0	59.0	60.0	8	8	5	3	X	X	24	3	3
6/23	41.3°N	135.6°W	1200	98	01	08	01	1	1024.0	2	1.0	59.0	55.5	59.5	2	2	1	3	0	0	23	3	2
6/23	42.0°N	135.0°W	1700	99	35	11	03	0	1026.1	2	1.7	59.1	53.0	59.5	4	4	5	3	0	0	35	4	4
6/23	40.6°N	135.1°W	2300	99	35	09	01	0	1027.8	2	0.9	60.0	54.0	61.5	2	2	5	4	6	0	34	3	3
6/24	40.6°N	135.1°W	0500	99	30	06	03	0	1027.8	2	0.7	60.5	55.0	61.0	4	4	4	5	1	0	34	3	4
6/24	39.8°N	135.0°W	1100	93	XX	11	00	0	1027.8	4	0.7	60.8	54.5	62.5	4	4	1	5	X	X	XX	X	X
6/24	39.1°N	135.0°W	1700	98	05	11	03	1	1028.1	2	0.3	60.5	55.0	63.5	8	8	4	3	X	X	09	3	2
6/24	39.3°N	135.0°W	2300	99	04	06	01	2	1026.8	7	0.9	64.0	59.0	62.5	5	5	4	3	0	0	35	2	2
6/25	40.0°N	135.0°W	0500	98	03	05	01	1	1025.7	6	1.0	59.8	55.0	63.0	3	2	1	3	0	1	30	2	1
6/25	39.9°N	134.9°W	1100	98	03	03	02	0	1024.0	7	1.0	61.0	56.5	62.5	3	3	1	3	0	1	02	2	1
6/25	39.8°N	134.8°W	1700	99	25	01	03	1	1024.4	2	0.2	62.0	57.0	62.5	5	5	4	5	0	0	04	3	1
6/25	38.9°N	134.8°W	2300	99	35	07	01	1	1024.0	0	0.0	66.8	59.8	65.8	4	4	1	5	0	0	09	3	1
6/26	38.5°N	134.5°W	0500	99	35	07	02	1	1024.0	5	0.3	64.0	59.0	64.8	5	5	1	5	0	0	35	2	2
6/26	38.5°N	134.5°W	1100	98	32	08	02	1	1023.7	7	0.3	63.0	58.2	64.0	6	5	1	5	0	0	32	2	2
6/26	38.2°N	134.3°W	2300	99	35	10	02	1	1024.7	0	0.0	67.0	62.0	65.5	2	2	1	5	0	0	01	3	2
6/27	36.9°N	133.9°W	0500	98	32	08	03	1	1024.4	5	0.3	65.0	63.0	65.5	7	7	4	5	X	X	35	3	2
6/27	36.9°N	133.9°W	1100	92	32	08	02	2	1022.7	X	XX	65.0	62.0	65.5	8	8	X	X	X	X	32	3	2
6/27	36.5°N	133.8°W	1700	98	32	08	03	2	1023.0	3	0.3	67.5	65.5	65.5	8	8	6	4	X	X	34	3	2
6/27	35.8°N	133.8°W	2300	98	35	19	02	2	1021.7	7	0.7	69.0	66.5	66.5	7	7	4	5	0	0	35	3	2
6/28	34.9°N	133.9°W	0500	91	34	13	45	4	1021.0	0	0.0	66.8	65.5	68.1	9	9	X	0	X	X	34	3	4
6/28	34.4°N	133.7°W	1100	98	34	14	01	2	1020.3	7	0.7	66.0	65.0	66.6	3	3	4	4	X	X	34	3	2
6/28	33.5°N	133.6°W	1700	98	35	23	21	5	1021.0	2	0.7	68.5	66.0	67.5	5	5	4	4	0	0	01	3	3
6/28	32.9°N	133.6°W	2300	96	20	15	03	2	1020.3	0	0.0	69.5	69.5	68.1	6	6	5	2	0	0	04	3	4
6/29	32.0°N	133.5°W	0500	98	04	25	20	2	1019.6	2	0.3	67.7	64.0	67.5	8	8	5	2	X	X	04	3	4
6/29	31.1°N	133.4°W	1100	98	07	14	02	2	1019.3	7	1.0	68.5	63.5	66.0	8	8	4	2	X	X	04	3	4
6/29	31.2°N	133.0°W	1700	98	05	19	02	2	1020.0	2	1.0	66.0	61.0	66.8	8	8	5	3	X	X	00	3	5
6/29	31.5°N	132.3°W	2300	98	05	18	02	2	1020.0	4	0.0	67.0	62.0	67.0	8	8	5	3	X	X	04	3	5
6/30	31.9°N	131.7°W	0500	98	05	18	02	2	1021.0	2	0.3	66.0	61.5	66.0	8	8	4	3	X	X	04	3	5
6/30	33.5°N	130.5°W	1100	98	05	18	02	2	1020.0	7	0.3	65.0	60.2	65.9	X	X	X	X	X	X	04	3	5
6/30	32.5°N	130.3°W	1700	98	05	18	02	2	1022.0	2	0.7	65.0	59.0	65.5	8	8	4	3	X	X	04	3	5
6/30	32.9°N	129.7°W	2300	98	01	18	02	2	1021.3	7	1.0	64.5	57.5	65.5	8	8	4	3	X	X	02	3	5
7/1	33.3°N	129.0°W	0500	97	33	15	02	2	1021.7	X	XX	64.5	59.5	64.2	8	8	8	3	X	X	35	4	5
7/1	33.7°N	128.2°W	1100	97	34	18	02	2	1021.0	X	XX	63.0	57.0	63.0	8	8	4	3	X	X	36	3	5
7/1	33.9°N	127.6°W	1700	98	35	18	02	2	1021.7	X	XX	63.0	58.5	62.5	6	6	4	3	0	0	35	3	4
7/1	34.2°N	126.9°W	2300	99	31	19	01	1	1020.7	7	0.7	64.2	61.3	63.5	3	3	8	3	0	9	02	3	4
7/2	34.5°N	126.4°W	0500	99	35	14	01	1	1020.7	4	0.0	63.5	58.5	63.3	3	3	8	3	X	X	35	3	2
7/2	34.5°N	126.4°W	1100	99	01	16	02	0	1017.6	7	0.2	62.0	58.5	63.5	3	3	8	3	0	0	00	3	2
7/2	34.6°N	126.2°W	1700	99	32	18	01	1	1021.0	3	1.0	62.5	58.0	62.5	4	4	1	4	0	0	01	3	2
7/2	34.8°N	125.6°W	2300	99	34	18	02	0	1021.0	7	0.3	65.5	59.0	61.5	3	3	2	4	0	0	01	3	2
7/3	35.0°N	125.3°W	0500	99	32	16	02	1	1020.0	0	0.0	61.5	59.0	61.5	3	3	2	3	0	0	31	3	6
7/3	41.3°N	126.1°W	1100	97	02	20	02	0	1021.0	2	0.7	61.5	57.8	61.6	3	3	2	3	0	0	35	3	6
7/3	35.0°N	127.1°W	1700	97	34	17	02	0	1023.7	2	1.4	64.0	59.5	62.5	3	3	4	3	0	0	01	3	4
7/3	34.9°N	127.9°W	2300	98	02	20	03	1	1024.4	7	0.2	65.0	61.0	64.0	7	7	4	3	0	0	00	3	4
7/4	35.0°N	128.9°W	0500	98	00	23	01	1	1023.7	4	0.0	63.0	59.0	63.1	5	5	5	4	0	0	00	3	6
7/4	34.9°N	129.8°W	1100	98	32	20	02	2	1023.0	4	0.0	64.0	58.0	64.5	7	7	5	4	X	X	01	3	4
7/4	34.9°N	130.6°W	1700	98	35	20	02	2	1024.4	2	1.0	64.0	58.5	64.5	4	4	4	4	9	0	01	3	4
7/4	35.1°N	131.5°W	2300	99	33	18	02	2	1023.0	3	1.7	64.5	60.2	64.4	7	7	5	5	6	0	01	4	5
7/5	35.1°N	132.5°W	0500	98	35	14	02	2	1023.7	0	0.0	64.0	58.5	65.5	8	8	4	3	X	X	02	3	5

Table 6.--Weather observations (USWB 1210-F), John R. Manning cruise 36 (NEPAS) (cont'd)

Date, 1957	Latitude	Longitude	Time, GCT	Visibility	Wind		Weather		Pressure			Temperature			Clouds						Waves		
					Direction	Speed, kt.	Present	Past	Bar. corr., mb.	Characteristic	Amt. change	Dry bulb, °F.	Wet bulb, °F.	Sea water, °F.	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
7/5	35.6°N	131.8°W	1100	99	35	16	02	2	1022.2	1	1.7	63.5	59.0	65.0	8	8	4	3	X	X	01	3	4
7/5	36.0°N	131.1°W	1700	94	33	15	46	4	1022.4	2	0.3	63.5	61.0	64.0	8	8	5	3	6	X	30	3	4
7/5	36.3°N	130.6°W	2300	98	36	14	01	2	1021.3	7	0.2	64.0	61.0	64.5	5	5	5	3	0	0	01	3	3
7/6	36.6°N	130.2°W	0500	97	34	08	03	1	1021.7	2	0.3	62.5	61.0	63.0	6	4	6	0	4	X	32	3	3
7/6	36.6°N	130.2°W	1100	93	00	08	46	4	1021.3	0	0.0	62.4	60.5	63.5	9	9	X	0	X	X	00	2	2
7/6	36.8°N	130.0°W	1700	98	35	13	01	2	1023.4	2	1.0	62.7	60.0	63.0	6	6	4	3	6	X	35	2	2
7/6	37.2°N	129.3°W	2300	98	33	18	03	1	1023.0	7	0.7	64.0	61.0	63.5	8	6	4	3	X	X	35	3	3
7/7	37.4°N	129.1°W	0500	98	34	12	02	2	1022.7	2	0.7	63.5	59.3	63.0	8	8	5	2	X	X	34	3	2
7/7	37.5°N	129.0°W	1100	98	34	10	02	2	1022.7	7	0.7	62.5	58.5	63.0	4	4	5	2	X	X	34	2	2
7/7	37.5°N	129.0°W	1700	99	35	10	01	0	1023.7	2	0.5	64.5	61.0	63.0	2	2	1	3	0	0	00	2	2
7/7	37.7°N	128.5°W	2300	99	35	11	02	0	1023.0	7	0.7	64.5	61.0	62.0	0	0	0	9	0	0	02	3	3
7/8	38.1°N	128.0°W	0500	99	35	10	02	0	1023.0	3	0.7	62.5	57.0	62.0	0	0	0	9	0	0	00	3	3
7/8	38.6°N	127.5°W	1100	99	35	13	02	0	1021.7	7	0.7	63.5	60.0	61.5	0	0	0	9	0	0	00	3	3
7/8	38.8°N	127.0°W	1700	99	32	15	02	1	1022.4	2	0.2	63.3	60.0	61.9	8	8	5	3	X	X	00	3	3
7/8	39.4°N	126.3°W	2300	99	34	15	02	2	1021.3	X	XX	62.5	59.5	61.5	2	2	4	3	0	0	00	3	4
7/9	39.6°N	125.5°W	0500	99	35	18	02	0	1020.0	7	0.7	62.0	59.5	59.5	0	0	0	9	0	0	00	3	2
7/9	40.0°N	125.0°W	1100	98	00	14	02	0	1020.3	7	1.0	57.5	55.0	52.5	0	0	0	9	0	0	00	3	3
7/9	40.0°N	125.7°W	1700	98	33	12	02	1	1021.0	2	0.2	63.5	62.0	61.5	6	6	4	3	0	0	31	3	2
7/9	40.0°N	126.6°W	2300	99	33	09	02	1	1021.0	7	0.7	62.5	60.0	62.0	1	1	4	3	0	0	33	2	2
7/10	40.0°N	126.9°W	0500	98	31	08	02	0	1020.0	6	0.2	64.7	61.5	62.4	1	1	2	3	0	0	31	3	2
7/10	40.0°N	126.9°W	1100	98	24	08	02	0	1018.3	7	0.9	64.0	62.0	62.4	1	1	2	3	0	0	32	3	2
7/10	40.0°N	127.1°W	1700	97	30	12	03	1	1018.3	7	0.5	65.5	63.0	62.5	8	8	4	3	X	X	31	2	2
7/10	40.0°N	129.2°W	2300	99	28	15	01	2	1018.6	0	0.0	64.2	60.2	62.2	6	6	5	3	0	0	25	3	5
7/11	40.0°N	128.5°W	0500	98	28	15	02	2	1021.3	2	1.7	63.0	59.0	63.0	5	5	5	3	X	X	25	3	4
7/11	40.0°N	129.1°W	1100	98	34	13	02	2	1022.7	2	1.7	63.0	59.5	62.0	6	6	5	3	X	X	34	3	5
7/11	40.1°N	130.1°W	1700	99	05	06	02	2	1024.4	2	0.7	65.0	58.2	62.5	6	3	5	5	7	6	49	4	3
7/11	40.1°N	131.1°W	2400	99	10	07	02	2	1022.7	7	1.2	68.5	60.0	64.0	3	3	2	4	6	6	34	4	2
7/12	40.2°N	132.0°W	0500	99	15	10	02	1	1020.3	7	1.2	64.0	60.0	63.5	3	2	1	5	0	6	17	3	3
7/12	40.0°N	132.8°W	1100	98	14	20	00	1	1014.9	7	2.5	65.0	62.3	63.0	8	8	5	4	X	X	49	2	2
7/12	39.9°N	133.3°W	1700	97	24	10	21	6	1009.1	7	1.0	65.0	63.0	63.5	8	8	5	3	X	X	24	3	3
7/12	40.3°N	132.8°W	2300	98	18	13	02	6	1008.1	7	1.7	66.0	64.0	63.0	8	8	4	3	X	X	21	3	5
7/13	40.6°N	132.2°W	0500	98	24	11	03	1	1006.1	6	1.0	64.3	62.0	62.5	7	7	5	3	X	X	23	4	5
7/13	40.9°N	131.7°W	1100	98	24	16	02	2	1004.7	6	0.7	62.5	60.5	62.5	7	7	4	3	1	X	23	3	3
7/13	41.5°N	130.8°W	1700	99	25	05	02	1	1005.4	2	0.2	64.0	60.5	62.0	4	3	4	3	1	0	22	3	3
7/13	42.0°N	130.1°W	2300	99	24	14	02	1	1006.8	2	1.0	64.2	61.0	62.5	7	7	2	3	0	0	24	4	3
7/14	42.5°N	129.5°W	0500	98	30	18	03	1	1008.8	2	1.0	61.0	58.0	61.5	8	8	2	3	X	X	24	3	3
7/14	42.3°N	129.2°W	1100	98	27	20	01	1	1010.8	2	1.4	62.5	58.5	61.5	5	5	4	4	X	X	28	3	5
7/14	42.6°N	128.8°W	1700	99	29	17	01	2	1015.9	2	2.4	62.0	58.0	61.8	6	6	5	3	0	0	24	5	8
7/14	43.0°N	128.1°W	2300	98	29	21	02	2	1020.3	2	2.2	62.5	58.0	62.5	5	5	5	3	0	0	26	4	6
7/15	43.3°N	127.7°W	0500	98	28	06	02	2	1023.4	2	1.5	62.0	57.0	62.0	5	5	4	4	X	X	26	4	5
7/15	43.8°N	123.4°W	1100	98	29	16	02	1	1022.0	3	0.0	59.1	55.1	60.0	4	4	5	3	0	0	26	4	3
7/15	44.2°N	126.7°W	1700	99	33	14	02	1	1023.4	2	0.7	60.0	56.0	62.0	2	2	2	4	0	0	35	3	3
7/15	44.8°N	126.2°W	2300	99	33	12	02	1	1025.7	7	0.2	65.0	63.5	63.0	5	4	2	5	2	0	26	3	3
7/16	45.4°N	125.7°W	0500	98	34	13	02	1	1023.4	X	XX	61.5	58.0	62.0	4	4	2	4	0	0	02	2	3
7/16	45.8°N	124.8°W	1100	98	34	15	02	1	1022.4	7	0.5	60.0	55.0	62.5	4	4	2	4	0	0	01	2	3
7/22	46.0°N	124.5°W	2300	97	23	02	03	2	1017.3	X	XX	62.5	57.5	61.2	6	6	4	3	0	0	34	3	2
7/23	45.8°N	125.2°W	0500	97	33	01	02	2	1019.0	2	1.0	63.5	61.5	62.5	6	6	4	4	X	X	33	3	2
7/23	44.6°N	126.1°W	1100	98	34	09	50	1	1021.3	2	0.7	61.9	60.0	62.5	7	7	5	4	X	X	28	2	1
7/23	44.3°N	126.6°W	1700	97	34	08	21	2	1023.4	2	1.0	61.0	58.5	63.0	8	8	5	2	X	X	30	2	2
7/23	43.8°N	127.4°W	2300	98	32	11	01	2	1024.7	2	0.5	63.5	61.5	62.5	7	7	4	4	0	0	32	2	2

Table 6.--Weather observations (USWB 1210-F), John R. Manning cruise 36 (NEPAS) (cont'd)

Date, 1957	Latitude	Longitude	Time, GCT	Visibility	Wind		Weather		Pressure			Temperature			Clouds						Waves		
					Direction	Speed, kt.	Present	Past	Bar. corr., mb.	Characteristic	Amt. change	Dry bulb, °F.	Wet bulb, °F.	Sea water, °F.	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
7/24	43.7°N	127.9°W	0500	98	34	09	02	1	1024.7	0	0.0	60.5	56.0	61.5	3	3	2	3	0	0	34	2	2
7/24	43.3°N	127.9°W	1100	98	32	15	02	0	1023.7	8	0.5	62.5	56.5	62.0	3	3	2	3	X	X	34	2	1
7/24	43.7°N	127.7°W	1700	98	33	12	03	1	1024.0	7	0.3	61.5	58.0	61.5	8	8	4	4	X	X	34	3	3
7/24	43.3°N	127.2°W	2300	99	33	12	02	1	1022.0	7	1.7	63.0	57.5	63.1	3	3	2	4	0	0	34	3	3
7/25	42.8°N	127.9°W	0500	99	33	14	02	0	1021.0	7	0.5	62.0	57.0	62.0	3	3	2	4	1	0	34	3	3
7/25	42.4°N	128.6°W	1100	99	27	13	02	0	1019.6	7	1.0	62.0	58.5	61.5	3	3	1	4	0	0	33	3	3
7/25	42.1°N	129.1°W	1700	99	32	15	03	1	1020.3	2	0.3	62.5	59.2	61.9	6	5	2	4	6	0	30	2	3
7/25	41.7°N	129.9°W	2300	98	32	21	03	2	1021.0	2	0.3	62.5	58.5	62.5	6	6	4	4	2	0	30	2	4
7/26	41.2°N	130.4°W	0500	98	30	21	03	2	1023.7	2	1.5	61.5	56.5	62.0	8	8	4	4	X	X	30	2	5
7/26	40.7°N	130.5°W	1100	97	00	18	02	2	1024.4	0	0.0	62.5	55.0	62.0	2	3	5	4	X	X	00	3	5
7/26	40.9°N	131.1°W	1700	97	00	21	02	2	1025.1	2	1.0	61.0	55.5	62.0	8	8	5	3	X	X	00	3	5
7/26	40.4°N	131.3°W	2300	98	33	18	02	1	1025.4	2	0.2	64.0	58.5	63.0	4	4	4	4	0	0	33	3	5
7/27	39.7°N	131.3°W	0500	98	00	16	01	2	1024.7	0	0.0	63.0	59.0	62.5	6	6	5	4	X	X	35	4	5
7/27	38.9°N	131.2°W	1100	98	00	14	02	2	1024.7	4	0.0	62.5	58.5	63.0	7	7	5	4	X	X	35	4	4
7/27	38.3°N	131.0°W	1700	98	30	17	21	2	1024.4	4	0.0	63.0	60.5	63.5	7	7	5	4	0	0	00	3	5
7/27	38.4°N	130.4°W	2300	98	31	11	01	2	1022.7	0	0.0	65.0	62.2	64.0	7	7	5	3	0	0	00	2	3
7/28	38.5°N	129.7°W	0500	98	03	16	02	2	1022.0	6	1.0	63.5	61.0	63.5	8	8	5	4	X	X	03	2	5
7/28	38.7°N	129.0°W	1100	98	33	18	01	1	1019.3	7	1.0	63.0	61.0	62.0	2	2	5	4	0	0	01	2	5
7/28	38.8°N	128.6°W	1700	92	33	16	50	2	1019.6	4	0.0	62.0	60.5	62.7	9	9	X	0	X	X	03	2	5
7/28	38.8°N	128.7°W	2300	98	35	16	01	2	1019.0	0	0.3	63.0	60.5	63.0	5	5	2	4	2	0	32	2	3
7/29	38.7°N	127.6°W	0400	98	31	15	01	2	1018.3	7	0.3	64.5	61.0	62.5	2	2	4	5	0	0	30	2	2
7/29	38.8°N	128.7°W	1100	98	26	06	00	1	1016.9	7	1.0	64.0	62.5	62.5	4	4	4	5	X	X	32	2	2
7/29	38.8°N	128.6°W	1700	98	28	04	02	1	1017.3	4	0.0	65.0	62.0	63.0	3	3	4	4	5	0	32	2	2
7/29	38.9°N	127.8°W	2300	98	34	11	03	1	1017.3	4	0.0	65.0	62.0	63.5	5	5	4	5	0	0	01	2	2
7/30	39.0°N	127.5°W	0500	98	33	12	02	2	1017.6	2	0.7	64.7	61.5	63.2	7	7	8	3	X	X	29	2	2
7/30	39.0°N	127.5°W	1100	97	34	17	02	2	1018.6	2	0.2	63.0	58.0	62.8	7	7	8	3	X	X	30	2	2
7/30	39.0°N	127.6°W	1700	98	01	12	02	2	1020.7	2	1.0	63.5	58.0	62.6	8	8	5	3	X	X	32	2	2
7/30	39.0°N	127.5°W	2400	99	32	12	02	2	1020.3	0	0.0	63.0	58.0	62.8	6	6	5	4	0	0	32	2	3
7/31	39.0°N	127.5°W	0500	99	34	20	02	1	1020.3	4	0.0	62.0	57.5	62.2	2	2	5	4	X	X	34	2	3
7/31	39.0°N	127.4°W	1200	98	33	16	02	0	1020.0	7	0.3	62.5	59.0	62.0	3	3	4	5	0	0	32	2	2
7/31	39.0°N	127.4°W	2300	98	33	12	02	0	1021.7	2	0.3	65.0	60.0	63.0	2	2	4	5	0	0	33	2	2
8/1	39.0°N	127.6°W	1700	98	35	30	02	1	1022.4	2	0.7	62.5	58.5	62.6	2	2	4	4	0	0	35	3	6
8/1	39.2°N	127.6°W	2300	98	35	20	02	1	1021.0	7	0.7	64.0	59.5	62.5	3	3	4	5	0	0	35	3	7
8/2	39.3°N	127.5°W	0500	98	00	25	02	0	1021.7	2	0.2	62.5	58.0	62.3	3	3	4	5	X	X	50	2	0
8/2	39.5°N	127.5°W	1100	98	00	28	02	0	1020.7	7	0.5	61.3	58.0	62.8	4	4	4	5	X	X	00	2	7
8/2	39.5°N	127.5°W	1700	98	00	22	02	0	1021.0	2	0.3	64.0	60.0	62.5	3	3	3	5	0	0	00	2	7
8/2	39.3°N	127.5°W	2300	99	34	19	03	1	1020.3	6	0.7	64.0	60.1	62.0	6	6	5	4	0	0	00	2	7
8/3	38.5°N	127.5°W	0500	99	35	20	02	2	1019.6	6	0.3	63.0	59.5	62.5	5	5	5	4	0	0	00	2	5
8/3	38.8°N	127.6°W	1300	98	34	20	03	1	1011.9	7	1.0	64.0	60.5	62.5	8	8	4	4	X	X	03	2	3
8/3	39.0°N	127.6°W	1700	97	28	09	46	2	1017.3	7	0.3	64.8	61.8	59.8	8	3	5	6	0	8	31	2	2
8/3	38.8°N	127.1°W	2300	98	29	09	02	1	1016.3	0	0.0	64.0	60.5	59.8	3	3	5	4	4	0	30	2	2
8/4	38.9°N	126.5°W	0500	98	30	11	03	1	1015.9	7	0.3	62.0	60.0	61.3	7	7	4	4	X	X	30	2	2
8/4	38.9°N	126.5°W	1100	92	30	09	02	2	1014.2	7	0.0	61.2	59.0	60.8	8	8	X	0	X	X	30	2	2
8/4	38.8°N	125.7°W	1700	98	23	06	02	1	1015.2	0	0.0	63.0	60.5	61.8	1	1	4	5	0	0	27	2	2
8/4	39.0°N	126.2°W	2300	99	25	11	03	0	1015.6	7	0.3	64.0	61.0	61.3	2	2	2	4	6	9	29	4	8
8/5	38.8°N	126.5°W	0500	99	27	06	02	0	1015.9	2	0.2	63.0	60.5	60.5	2	X	X	X	X	X	30	4	7
8/5	38.5°N	126.1°W	1100	99	27	11	02	0	1015.2	7	0.3	62.5	59.5	61.5	1	1	0	6	6	0	30	3	4
8/5	38.4°N	125.8°W	1700	98	31	04	03	1	1017.3	2	1.5	61.0	58.5	55.7	7	7	4	4	0	0	31	4	4
8/5	38.3°N	125.7°W	2300	99	27	09	02	1	1017.6	0	0.0	63.0	59.5	56.5	1	1	5	4	0	0	30	4	5
8/6	38.1°N	125.7°W	0500	98	25	11	03	1	1018.3	2	0.3	60.5	58.0	56.8	6	6	5	4	6	1	30	3	4

Table 6.--Weather observations (USWB 1210-F), John R. Manning cruise 36 (NEPAS) (cont'd)

Date, 1957	Latitude	Longitude	Time, GCT	Visibility	Wind		Weather		Pressure			Temperature			Clouds						Waves		
					Direction	Speed, kt.	Present	Past	Bar. corr., mb.	Characteristic	Amt. change	Dry bulb, °F.	Wet bulb, °F.	Sea water, °F.	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
8/6	37.8°N	125.7°W	1200	98	31	11	01	1	1017.6	7	0.3	62.3	60.0	60.0	3	3	4	4	0	0	30	3	2
8/6	37.1°N	125.1°W	1700	99	33	09	01	2	1018.6	2	1.0	63.0	60.2	60.9	7	7	5	3	0	0	35	2	2
8/6	36.8°N	124.6°W	2300	99	30	06	02	1	1018.6	4	0.0	64.0	60.0	60.1	1	1	4	4	0	0	35	3	2
8/7	36.8°N	124.6°W	0400	99	30	12	02	0	1017.6	7	0.2	61.7	60.0	59.0	0	0	0	9	0	0	35	3	3
8/7	36.8°N	124.6°W	1100	90	32	11	45	2	1016.9	7	0.3	60.0	60.0	59.0	9	9	X	0	X	X	32	2	2
8/7	36.6°N	124.3°W	1800	95	26	06	28	2	1019.0	2	1.9	64.0	63.0	60.5	8	8	4	3	X	X	30	2	2
8/7	36.1°N	123.5°W	2300	97	30	04	03	1	1018.3	7	0.3	64.5	62.0	62.0	7	7	4	3	0	0	30	3	2
8/8	36.3°N	123.8°W	0500	97	30	10	40	2	1018.0	2	0.7	63.0	60.1	60.2	8	8	5	3	X	X	30	3	2
8/8	36.1°N	123.5°W	1100	97	30	08	02	2	1018.0	4	0.0	62.0	59.5	60.2	8	8	5	3	X	X	30	2	2
8/8	36.2°N	123.4°W	1700	97	31	12	02	2	1018.6	2	1.0	62.5	59.5	60.5	8	8	4	3	X	X	30	2	2
8/8	35.3°N	123.4°W	2300	99	32	11	02	1	1018.0	7	0.5	64.8	61.0	61.5	5	3	5	4	6	0	32	2	2
8/9	34.8°N	123.4°W	0500	99	31	18	02	1	1016.9	7	0.5	62.5	59.5	61.7	1	1	5	5	0	0	30	2	2
8/9	34.8°N	123.4°W	1100	99	30	17	02	0	1016.3	7	0.3	62.5	60.0	61.5	3	3	1	4	0	0	30	2	2
8/9	34.8°N	123.8°W	1700	99	32	13	03	1	1017.3	2	0.3	63.0	60.0	61.0	3	2	2	4	0	2	32	3	3
8/9	34.8°N	124.2°W	2300	99	32	20	02	0	1016.3	7	0.5	64.2	60.5	63.0	1	1	2	4	0	0	30	3	4
8/10	34.7°N	124.5°W	0500	97	32	21	03	1	1015.9	5	1.5	63.5	62.3	62.5	8	8	4	4	X	X	30	3	4
8/10	34.5°N	125.1°W	1100	98	34	22	02	2	1015.6	7	0.7	62.0	59.5	62.5	8	8	5	4	X	X	34	3	4
8/10	34.3°N	126.0°W	1700	99	34	20	02	1	1017.6	2	1.0	70.0	60.5	63.8	3	3	2	4	0	0	35	3	4
8/10	34.2°N	126.8°W	2300	99	00	19	02	1	1017.3	7	0.7	66.5	61.0	65.5	5	2	4	4	5	0	01	3	3
8/11	34.0°N	127.6°W	0500	98	01	17	02	1	1017.3	2	0.9	65.0	61.2	65.0	7	7	2	3	X	X	01	3	4
8/11	34.0°N	128.4°W	1100	98	00	17	02	2	1017.3	4	0.0	65.0	61.0	65.5	4	4	2	4	X	X	00	3	4
8/11	33.7°N	129.2°W	1700	98	02	21	02	2	1019.6	2	1.2	67.5	63.0	66.0	8	8	4	4	X	X	00	3	4
8/11	33.6°N	130.0°W	2300	99	00	12	02	2	1020.0	4	0.0	68.0	63.2	66.6	7	7	5	4	0	0	00	3	3
8/12	33.3°N	130.0°W	0500	98	00	12	02	1	1021.0	2	0.5	67.5	63.2	67.5	5	5	5	4	X	X	00	3	3
8/12	33.1°N	131.6°W	1100	98	00	12	02	2	1020.7	7	0.2	67.5	64.0	68.0	6	6	5	4	X	X	00	3	2
8/12	33.0°N	132.5°W	1700	99	04	16	02	2	1022.4	2	0.9	68.5	64.0	68.2	8	8	5	4	X	X	04	2	2
8/12	32.7°N	133.0°W	2300	99	04	12	02	2	1022.0	7	0.7	69.0	62.7	69.0	5	5	4	4	0	0	06	2	3
8/13	32.3°N	134.0°W	0500	99	04	12	02	1	1023.4	3	1.0	69.5	64.0	68.7	2	2	1	4	0	0	05	2	2
8/13	31.9°N	134.8°W	1100	98	05	13	02	1	1022.7	4	0.0	68.5	63.5	69.0	8	8	4	4	X	X	05	2	2
8/13	31.7°N	135.5°W	1700	98	04	14	03	2	1023.7	2	0.5	70.0	62.0	69.8	7	7	4	3	0	0	04	2	2
8/13	31.4°N	136.6°W	2300	99	04	13	01	1	1022.7	7	0.3	71.5	66.0	70.3	3	1	1	3	4	0	03	2	2
8/14	31.0°N	137.5°W	0500	98	05	14	02	1	1023.0	2	0.7	70.2	63.1	69.2	6	4	2	3	6	1	04	3	3
8/14	30.6°N	138.4°W	1100	98	04	17	02	1	1022.0	7	1.0	69.8	62.6	69.8	5	5	2	3	4	0	04	3	3
8/14	30.2°N	139.3°W	1800	98	04	09	02	1	1022.7	2	0.3	72.0	64.5	70.7	6	4	4	4	1	8	01	3	3
8/14	29.9°N	139.9°W	2300	99	04	09	02	1	1021.3	7	0.7	74.3	65.5	71.6	6	3	2	3	8	0	04	3	3
8/15	29.5°N	140.9°W	0500	99	04	10	02	1	1020.7	5	0.3	71.0	64.0	72.5	6	6	2	3	4	1	04	3	3
8/15	29.0°N	141.1°W	1200	99	07	13	02	1	1019.6	7	0.7	69.7	64.0	71.5	5	4	4	4	4	0	04	3	3
8/15	28.7°N	142.4°W	1800	99	07	19	02	1	1020.3	1	0.7	72.5	65.5	72.2	5	4	2	4	6	0	08	3	3
8/15	28.3°N	143.3°W	2300	98	02	16	02	1	1019.3	7	0.5	73.0	66.0	73.5	6	6	2	3	6	0	12	3	3
8/16	28.0°N	144.0°W	0500	98	09	17	02	1	1019.3	4	0.0	72.5	67.5	73.5	4	3	4	4	4	8	10	3	3
8/16	27.6°N	144.9°W	1100	98	08	13	03	0	1019.6	7	0.2	71.2	67.0	74.8	3	3	2	4	0	0	34	3	3
8/16	26.9°N	145.6°W	1800	98	08	14	02	0	1021.0	2	0.7	73.0	67.5	73.0	4	4	2	4	0	0	32	3	3
8/16	26.6°N	146.3°W	2300	98	07	12	02	0	1020.0	7	0.9	74.5	68.0	73.5	2	1	1	4	1	1	10	3	3
8/17	26.3°N	147.0°W	0500	98	10	14	02	1	1020.0	4	0.0	73.5	69.2	74.6	6	6	2	3	X	X	10	3	3
8/17	25.8°N	148.0°W	1100	98	09	12	02	2	1020.3	4	0.0	73.5	67.0	74.0	5	5	2	3	X	X	09	3	3
8/17	25.5°N	148.7°W	1700	98	07	16	02	2	1021.7	2	0.7	75.3	68.0	74.3	5	4	4	4	2	0	07	3	4
8/17	25.2°N	149.6°W	2300	99	07	17	02	2	1021.7	6	1.0	78.8	71.0	75.4	6	5	2	3	6	0	08	2	3
8/18	24.8°N	150.4°W	0500	98	08	20	02	2	1021.0	5	0.0	74.5	70.0	75.0	6	6	2	3	6	0	08	3	3
8/18	24.4°N	151.4°W	1100	99	07	17	01	1	1020.7	7	0.9	74.5	70.5	75.0	3	3	1	5	0	0	07	3	3
8/18	24.0°N	152.1°W	1700	99	07	15	02	1	1020.3	2	0.9	75.8	71.0	75.9	6	6	2	3	0	2	07	3	3

Table 6.--Weather observations (USWB 1210-F), John R. Manning cruise 36 (NEPAS) (cont'd)

Date, 1957	Latitude	Longitude	Time, GCT	Visibility	Wind		Weather		Pressure			Temperature			Clouds						Waves		
					Direction	Speed, kt.	Present	Past	Bar. corr., mb.	Characteristic	Amt. change	Dry bulb, °F.	Wet bulb, °F.	Sea water, °F.	Total amount	Amount low	Type low	Height low	Type middle	Type high	Direction	Period	Height
8/18	23.7°N	152.9°W	2300	99	07	18	02	1	1019.0	7	1.4	78.2	72.8	77.5	4	4	2	3	0	0	07	3	3
8/19	23.2°N	153.6°W	0500	98	07	21	15	1	1018.3	5	0.2	76.5	72.0	76.0	6	5	4	4	X	X	07	3	4
8/19	22.9°N	154.4°W	1100	98	07	18	02	1	1018.0	7	1.0	75.5	72.2	77.0	3	3	2	3	0	0	07	3	4
8/19	22.5°N	155.4°W	1800	98	07	21	02	0	1017.6	2	0.2	78.4	71.5	77.0	3	3	2	3	0	0	07	3	4
8/19	22.1°N	156.1°W	2300	97	07	23	03	1	1017.6	4	0.0	77.5	73.0	78.0	6	5	4	4	1	0	07	3	4
8/20	21.7°N	156.8°W	0500	98	09	19	03	1	1016.3	X	XX	78.0	73.0	77.4	7	5	2	3	6	2	10	3	5

Table 7.--Summary of observations made at the submarine photometer station, John R. Manning cruise 36 (NEPAS) June 11 - August 20, 1957

Station	Date 1957	Time	Position: Latitude north	Position: Longitude west	Photometer: 50% level (m.)	Photometer: Incident light ft.-c.	Photometer: 10% level (m.)	Photometer: Incident light ft.-c.	Photometer: 5% level (m.)	Photometer: Incident light ft.-c.	Photometer: 1% level (m.)	Photometer: Incident light ft.-c.	Secchi disc depth (m.)	Forel color	Cloud cover 1/	Cloud type 1/	Sea 1/	Remarks
1	6/12	1340	22°43'	156°07'	-	5250	53.5	-	89.0	-	141.0	-	44	3	6	3	4	+10 zone time, boat rolling
2	6/14	1340	26°55'	152°08'	-	11,250	-	-	-	-	-	-	32	1	2	1,6,8	3	Photometer readings not recorded
3	6/15	1340	29°11'	149°52'	3.5	7200	41.0	-	77.5 (74.8) 2/	-	129.0 (124.6)	-	28	2	3	1,6,8	1	-
4	6/16	1340	31°27'	147°20'	-	9000	-	-	-	-	-	-	42	2	1	1,5	2	Cable broke
6	6/17	1440	33°52'	145°01'	11.0	9750	24.0	-	71.0 (69.9)	-	105.5 (103.9)	-	48	2	3	2,5,8	2	+9 zone time, 50% and 10% not reliable
8	6/18	1440	36°00'	143°00'	11.0	5640	42.0	2250	64.0	2250	112.0	5640	32	2	8	5,6	2	-
10	6/19	1440	36°42'	141°56'	2.0	5610	41.0	5610	66.0 (65.0)	9000	116.0 (114.2)	9000	28	2	7	6	5	-
12	6/20	1440	37°22'	140°59'	3.0	5610	35.0	-	72.0	-	132.0	-	30	2	7	0,6	2	-
13A	6/21	1440	39°18'	138°39'	3.5	3900	29.0	-	49.0	-	104.0 (102.4)	-	28	2	8	6	1	-
14	6/22	0730	39°43'	138°02'	1.5	1440	31.5	-	67.5	-	111.0 (110.5)	-	28	2	8	6	3	1% not reliable
15	6/22	1440	40°23'	137°08'	10.0	7500	28.5	-	46.0 (45.8)	-	83.0 (78.0)	-	24	3	7	6	2	7,500 is an average of 7,800 and 7,200
17	6/23	1440	41°10'	135°04'	2.0	7800	33.0 (32.9)	-	49.0 (48.8)	-	102.0 (101.6)	-	36	2	2	6	3	Boat rolling
19	6/24	1540	39°20'	134°57'	2.0	6900	45.0	7200	72.0 (71.7)	7200	149.0 (148.4)	7200	30	2	6	6	2	+8 zone time
21	6/25	0800	39°48'	134°53'	5.0	5250	47.0	7200	61.0	5700	-	-	42	1.5	2	6	1	Cable broke
22	6/25	1530	38°55'	134°50'	10.0	7800	-	-	-	-	-	-	48	2	4	8	1	Cable broke
24A	6/26	0800	38°24'	134°26'	2.0	3750	-	-	-	-	-	-	36	1.5	6	6,8	2	Cable broke

1/ Coded according to U. S. N. H. O. Pub. 606-c (1956).

2/ Brackets enclose values corrected for wire angles.

Table 7.--Summary of observations made at the submarine photometer station, John R. Manning cruise 36 (NEPAS) June 11 - August 20, 1957 (cont'd)

Station	Date 1957	Time	Position		Photometer													Remarks
			Latitude north	Longitude west	50% level (m.)	Incident light ft.-c.	10% level (m.)	Incident light ft.-c.	5% level (m.)	Incident light ft.-c.	1% level (m.)	Incident light ft.-c.	Secchi disc depth (m.)	Forel color	Cloud cover 1/	Cloud type 1/	Sea 1/	
24A	6/26	1540	37°36'	134°00'	-	-	-	-	-	-	-	-	40	2	2	6,8	2	Cable broke
-	6/27	0800	36°31'	133°48'	-	-	-	-	-	-	-	-	28	2	6	8	2	Cable broke
25	6/27	1540	35°48'	133°46'	8.0	4200	-	4200	-	5400	-	5400	34	2	7	6	2	10%, 5%, and 1% not reliable
27	6/28	1540	32°38'	133°32'	-	-	45.0 (44.8)	10,800	69.0 (66.6)	11,150	-	3750	38	2	6	6	4	Secchi disc 60° angle boat rolling
29	6/29	1540	31°33'	132°16'	4.5	3900	44.0 (43.3)	5100	77.0 (76.6)	3750	-	6000	-	-	8	6	5	Rough sea, intermittent cloudiness
31	6/30	1540	32°54'	129°38'	4.0	3750	49.0	3450	70.0 (68.9)	3450	-	2400	30	2	8	6	5	-
33	7/1	1540	34°14'	126°47'	6.0	3450	30.0	3900	51.0	3450	72.0 (71.7)	3900	28	2	6	1,6,8	4	Intermittent cloudiness
35	7/2	0940	34°35'	126°08'	1.0	9750	22.5	10,500	50.0	9750	85.0 (83.7)	10,500	28	2	4	6,8	3	-
36	7/2	1540	34°49'	125°32'	12.0	10,650	24.5	9750	39.5	7500	90.0 (86.9)	7800	24	4	3	6,8	3	-
38	7/3	1540	34°56'	127°58'	2.5	3600	37.5 (37.2)	3294	76.0 (73.4)	2100	-	3294	-	-	7	6	4	-
40	7/4	1540	35°05'	127°36'	-	-	28.0	1200	88.0 (86.7)	1350	-	1440	22	2	7	4,6	5	Rain
42	7/5	1545	36°23'	130°32'	3.0	3600	47.0 (46.3)	11,250	72.0 (69.5)	3900	-	3900	36	2	5	6,8	4	Fog patches
44	7/6	0940	36°50'	129°59'	7.0	3750	31.0	7800	72.0	3750	-	4686	30	2	5	8	2	-
45	7/6	1540	37°09'	129°26'	3.0	2835	41.5	2376	89.5	1920	-	1920	34	2	8	6	4	-
46	7/7	0950	37°27'	129°02'	2.0	11,250	41.0	11,250	60.6	11,250	-	11,250	34	2	3	8	3	Boat rolling
47	7/7	1540	37°47'	128°31'	5.0	7500	32.0	9375	54.0	9375	-	9375	-	-	0	X	3	-
48A	7/8	1540	39°22'	126°16'	8.0	7500	32.0 (31.9)	7800	57.0 (56.1)	7650	-	7500	-	-	2	6	3	-
49A	7/9	1540	39°59'	126°38'	7.5	9375	31.0	8436	52.0	7500	-	8436	32	2	1	6	3	-

1/ Coded according to U.S.N.H.O. Pub. 606-c (1956).

Table 7.--Summary of observations made at the submarine photometer station, John R. Manning cruise 36 (NEPAS) June 11 - August 20, 1957 (cont'd)

Station	Date 1957	Time	Position		Photometer								Secchi disc depth (m.)	Forel color	Cloud cover 1/	Cloud type 1/	Sea 1/	Remarks
			Latitude north	Longitude west	50% level (m.)	Incident light ft.-c.	10% level (m.)	Incident light ft.-c.	5% level (m.)	Incident light ft.-c.	1% level (m.)	Incident light ft.-c.						
51	7/10	0940	40°02'	127°07'	0.5	2835	64.0	1920	67.0 (66.7)	1920	-	2376	32	2	8	6	3	-
53	7/11	1540	40°07'	131°06'	-	-	-	-	58.0	9365	-	9365	36	2	3	1,4,5	2	-
55	7/12	1540	40°16'	132°42'	-	1560	45.0 (44.8)	1560	85.0 (82.1)	1200	-	1680	30	2	8	6	4	Rain and fog, rolling
57	7/13	1540	41°58'	129°57'	0	2835	27.0 (25.9)	2835	52.0 (51.8)	2835	-	2376	28	3	6	6,8	3	-
59	7/14	1540	43°03'	128°09'	6.0	4686	22.0	5622	41.0 (40.8)	7500	-	7500	28	3	5	6,8	5	-
61	7/15	1540	44°50'	126°11'	1.2	2835	16.0	7500	31.0 (30.9)	7500	-	6564	22	5	5	4,5,8	3	Intermittent sunshine
64	7/23	0940	44°18'	126°38'	0.6	2915	16.5	3294	35.5	3294	-	3522	20	6	9	6	2	-
65	7/23	1540	43°51'	127°22'	5.0	5625	30.0	4686	50.0	5625	-	4686	32	3	6	6	3	-
66	7/24	0800	43°43'	127°51'	-	-	30.0	2835	68.0	2835	-	2835	32	3	5	4,6,8	2	-
67	7/24	1540	43°13'	127°12'	4.0	7500	23.0	7500	41.0	7500	-	7500	26	4	3	8	3	-
69	7/25	0940	42°05'	129°12'	-	-	12.0	7500	40.0	7500	-	7500	24	3	6	4,6,8	3	-
70	7/25	1540	41°37'	129°54'	4.5	7500	34.0	7500	53.0 (52.2)	4696	-	-	28	2.5	6	6,8	4	-
72	7/26	0940	40°52'	131°09'	-	11,250	40.0	2529	74.5 (72.0)	2835	-	3750	28	2	8	6	5	-
73	7/26	1540	40°23'	131°19'	2.0	3750	32.0	3294	70.0 (63.4)	6000	-	6000	24	3	3	6,8	5	-
75	7/27	0940	38°18'	130°53'	1.0	2376	24.0	3750	70.8 (69.7)	3750	-	9375	28	2	7	6	5	-
77	7/27	1550	38°26'	130°17'	4.0	11,250	40.0	3750	66.0 (65.0)	3750	-	3750	30	2	6	6	3	-
79	7/28	0940	38°46'	128°37'	0	1920	37.0 (36.8)	1440	74.5 (72.0)	1920	-	1920	30	2	6	6	3	-
80	7/28	1540	38°39'	128°40'	2.0	1920	43.0	1920	75.0 (73.9)	2835	-	6000	30	2	8	5	4	-

1/ Coded according to U.S.N.H.O. Pub. 606-c (1956).

Table 7.--Summary of observations made at the submarine photometer station, John R. Manning cruise 36 (NEPAS) June 11 - August 20, 1957 (cont'd)

Station	Date 1957	Time	Position		Photometer								Secchi disc depth (m.)	Forel color	Cloud cover[1]	Cloud type[1]	Sea[1]	Remarks
			Latitude north	Longitude west	50% level (m.)	Incident light ft.-c.	10% level (m.)	Incident light ft.-c.	5% level (m.)	Incident light ft.-c.	1% level (m.)	Incident light ft.-c.						
81	7/29	0900	38°46'	128°36'	-	-	32.0	7500	56.0	7500	-	7500	34	2	7	8	2	-
82	7/29	1540	38°56'	127°51'	5.0	6000	27.0	6000	54.0	6000	-	6000	28	2.5	6	6	3	-
83	7/30	1640	39°01'	126°26'	2.0	3750	31.0	3750	62.0	3750	-	3750	28	3	6	6	3	-
83[3]	7/31	1550	38°58'	127°28'	5.0	7500	30.0	7500	53.0 (52.8)	7500	-	7500	26	3	3	6,8	3	-
85	8/3	0940	38°56'	127°11'	-	7500	-	7500	37.0 (36.8)	11,250	-	7500	24	4	7	2,6	2	-
86	8/3	1540	38°53'	127°04'	8.0	7500	25.0	7500	40.0	7500	-	9366	24	5	3	2,6	3	50% not reliable
88	8/4	0940	38°56'	125°42'	-	7500	-	9366	46.0	9366	-	9366	26	3.5	1	8	2	-
89	8/4	1540	38°57'	126°10'	6.0	7500	25.0	7500	45.0	7500	-	7500	24	4	3	3,4,6,8	6	-
91	8/5	0940	38°14'	125°40'	-	7500	21.0	3291	55.5	2376	-	2376	20	5	7	6	4	-
92	8/5	1215	38°05'	125°25'	8.0	9366	17.0	9366	22.7	9366	68.0 (67.0)	9366	16	5	2	6	5	-
93	8/5	1540	38°14'	125°44'	5.0	7500	24.0	7500	34.0	7500	-	7500	22	4	1	6	5	-
95	8/6	0940	37°06'	125°07'	-	7500	-	9366	30.0	9366	-	9366	24	4	4	6	2	-
96	8/6	1210	36°58'	124°56'	3.0	3750	16.0	3750	41.0	3750	-	3750	18	5	7	6	2	-
98	8/6	1540	36°45'	124°34'	4.0	7500	15.0	7500	26.0	7500	-	7500	20	5	1	6	2	-
100	8/7	0950	36°35'	124°17'	-	7500	11.0	6561	32.0	5625	-	7500	-	-	8	6	2	Fog thin
101	8/7	1540	36°45'	124°34'	5.0	5625	19.0	5625	35.0	5625	-	5625	22	4	6	6	2	-
102	8/8	0815	36°08'	123°24'	-	1920	20.0	1920	40.0	1920	-	1920	20	4	8	6	2	-
103	8/8	1540	35°19'	123°23'	-	3750	8.0	3750	17.0	3750	-	3750	10	5	6	6	2	-
104	8/9	0940	34°47'	123°42'	-	9375	-	9375	14.5	9375	-	9375	14	5	2	1,6	3	-
105	8/9	1555	34°49'	124°10'	5.0	7500	22.0 (21.9)	7500	36.0 (35.9)	7500	-	7500	22	3	1	8	4	-
107	8/10	0940	34°17'	126°05'	-	9375	-	9375	55.0	9375	-	7500	30	2.5	8	6	4	-
108	8/10	1540	34°12'	126°52'	2.0	2376	38.0	3750	62.0	5625	-	4696	32	2	6	4,6,8	4	50% not reliable

1/ Coded according to U.S.N.H.O. Pub. 606-c (1956).

3/ 24-hour gill-net station.

Table 7.--Summary of observations made at the submarine photometer station, John R. Manning cruise 36 (NEPAS) June 11 - August 20, 1957 (cont'd)

Station	Date 1957	Time	Position		Photometer								Secchi disc depth (m.)	Forel color	Cloud cover[1]	Cloud type[1]	Sea[1]	Remarks
			Latitude north	Longitude west	50% level (m.)	Incident light ft.-c.	10% level (m.)	Incident light ft.-c.	5% level (m.)	Incident light ft.-c.	1% level (m.)	Incident light ft.-c.						
110	8/11	0940	33°41'	129°14'	1.0	3750	47.0 (46.8)	3750	88.0 (86.7)	4696	-	4696	30	2	8	6,8	4	50% not reliable
111	8/11	1540	33°33'	130°03'	6.0	5625	40.0	6561	76.0	6561	-	6561	34	1.5	7	6	3	-
113	8/12	0940	33°00'	132°28'	3.0	3750	32.0	3750	72.0	3750	-	4696	36	1.5	8	6	3	-
114	8/12	1440	31°24'	133°45'	-	9375	-	9375	5.0	9375	-	9375	28	2	5	6	3	-
116	8/13	0850	31°40'	135°48'	3.5	3750	53.0	3750	72.0 (69.5)	4696	-	4696	30	2	8	6	3	-
-	8/13	1440	31°22'	136°37'	-	-	-	-	-	-	-	-	32	2	2	4,8	3	Cable broke
-	8/14	1440	29°51'	140°03'	-	7500	-	-	-	-	-	-	28	2	6	4,8	3	+9 zone time, photometer reading
-	8/15	1440	28°18'	143°16'	-	7500	-	-	-	-	-	-	32	2	6	6,8	3	Abandoned
-	8/16	1440	26°35'	146°16'	-	11,250	-	-	-	-	-	-	38	2	2	1,5,8	3	-
-	8/17	1340	25°11'	149°40'	-	11,250	-	-	-	-	-	-	36	2	6	6,8	3	+10 zone time, angle 15°
-	8/18	1340	23°39'	152°55'	-	11,250	-	-	-	-	-	-	34	2	3	6,8	3	Angle 30°
-	8/19	1340	22°07'	156°06'	-	10,500	-	-	-	-	-	-	34	2	6	6,8	4	-

[1] Coded according to U.S.N.H.O. Pub. 606-c (1956).

Table 8. --Secchi disc data - NEPAS contract vessels

Vessel	Time LCT	Date	Latitude north	Longitude west	Secchi disc m.
Lancing	1200	7/22	45°03'	126°22'	16
Track 3	1200	7/23	44°56'	128°30'	19
	1200	7/24	45°05'	129°18'	14
	1200	7/25	45°00'	131°35'	15
	1200	7/26	45°00'	132°54'	12
	1200	7/27	44°20'	133°25'	11
	1200	7/28	44°32'	131°28'	17
	1200	7/29	44°19'	130°15'	13
	1200	7/30	44°19'	128°20'	16
	1200	7/31	44°20'	126°13'	12
Gypsy	1200	7/22	43°35'	125°48'	16
Track 4	1215	7/23	43°34'	127°45'	27
	1200	7/24	43°43'	128°58'	25
	1200	7/25	43°38'	130°35'	14
	1200	7/26	43°43'	132°15'	17
	1200	7/27	43°28'	133°25'	17
	1200	7/28	42°58'	132°03'	21
	1200	7/29	42°56'	130°20'	21
	1200	7/30	43°02'	128°37'	24
	1200	7/31	42°56'	126°51'	21
Flicker	ca. 1200	7/22	42°20'	126°04'	20
Track 5	"	7/23	43°20'	127°46'	20
	"	7/24	42°20'	129°21'	19
	"	7/25	42°21'	130°56'	18
	"	7/26	42°22'	131°34'	15
	"	7/27	41°40'	132°39'	20
	"	7/28	41°36'	130°53'	22
	"	7/29	41°30'	129°13'	16
	"	7/30	41°36'	127°45'	20
	"	7/31	41°40'	126°18'	22
Lynn Ann	1330	7/27	40°51'	132°52'	22
Track 6	1130	7/28	40°20'	131°54'	21
	1215	7/29	40°20'	130°19'	16
	1200	7/30	41°26'	128°27'	24
	1215	7/31	40°22'	126°42'	22
Rowland R. Sr.	1230	7/22	39°37'	125°35'	17
Track 7	1205	7/23	39°44'	127°00'	22
	1300	7/24	39°36'	128°30'	25
	1240	7/25	40°00'	129°16'	30
	1210	7/26	39°43'	131°24'	24
	1205	7/27	39°21'	131°11'	30
	1205	7/28	38°45'	131°57'	40
	1205	7/29	39°00'	130°05'	28
	1208	7/30	38°53'	128°25'	29
	1205	7/31	38°56'	127°22'	25
Allen Cody	1200	7/23	38°15'	125°05'	14
Track 8	1200	7/24	38°18'	126°32'	15
	1200	7/25	38°22'	127°49'	17
	1200	7/26	38°23'	129°31'	20
	1200	7/27	38°21'	131°10'	19

Table 8.--Secchi disc data - NEPAS contract vessels (cont'd)

Vessel	Time LCT	Date	Latitude north	Longitude west	Secchi disc m.
Allen Cody Track 8	1200	7/28	37°36'	129°55'	22
	1200	7/29	37°37'	128°22'	22
	1200	7/30	37°40'	126°56'	16
	1200	7/31	37°40'	125°34'	16
Tuna Clipper Track 9	1200	7/22	37°00'	123°30'	8
Luwella Track 10	1200	7/22	35°45'	122°40'	16
	1200	7/23	35°45'	123°37'	18
	1200	7/24	35°32'	124°39'	18
	1200	7/25	35°35'	125°14'	22
	1200	7/26	35°45'	127°40'	21
	1200	7/27	35°45'	129°24'	26
	1200	7/28	35°02'	128°25'	30
	1200	7/29	35°07'	126°47'	33
	1200	7/30	34°52'	125°00'	26
	1200	7/31	34°55'	123°20'	17
	1200	8/1	34°49'	121°48'	13

Table 9.--Station curves and observed oceanographic data
Hugh M. Smith cruise 40

Notes on Oceanographic Station Curves

Thermosteric anomaly (oblique lines) are in centiliters per ton (Montgomery 1954). Where temperatures of paired thermometers differed by more than 0.05°C. below 300 m. or more 0.10°C. above 300 m., both values are plotted and designated by the symbol ⩓ ⩓ . The other variables are plotted for each of the temperature values, see station 12. When the station curve is not drawn through a plotted value, it is considered a gross error and not used.

Explanatory code for station curves:

⩓ Reversing thermometer temperatures °C.

• BT temperature °C.

⊡ Salinity ‰.

▽ Dissolved oxygen ml./L.

⊙ Inorganic phosphate μg. at./L.

Notes on Observed Oceanographic Data

Where more than one cast was made on a station, they are separated by a horizontal line. The cast number is indicated by a Roman numeral in the margin.

Where the corrected, paired, protected thermometer readings differed by more than 0.05°C. below 300 m. or more than 0.10°C. above 300 m., both temperature values are tabulated and the depth and salinity are repeated. Delta-t calculated using each temperature value is carried.

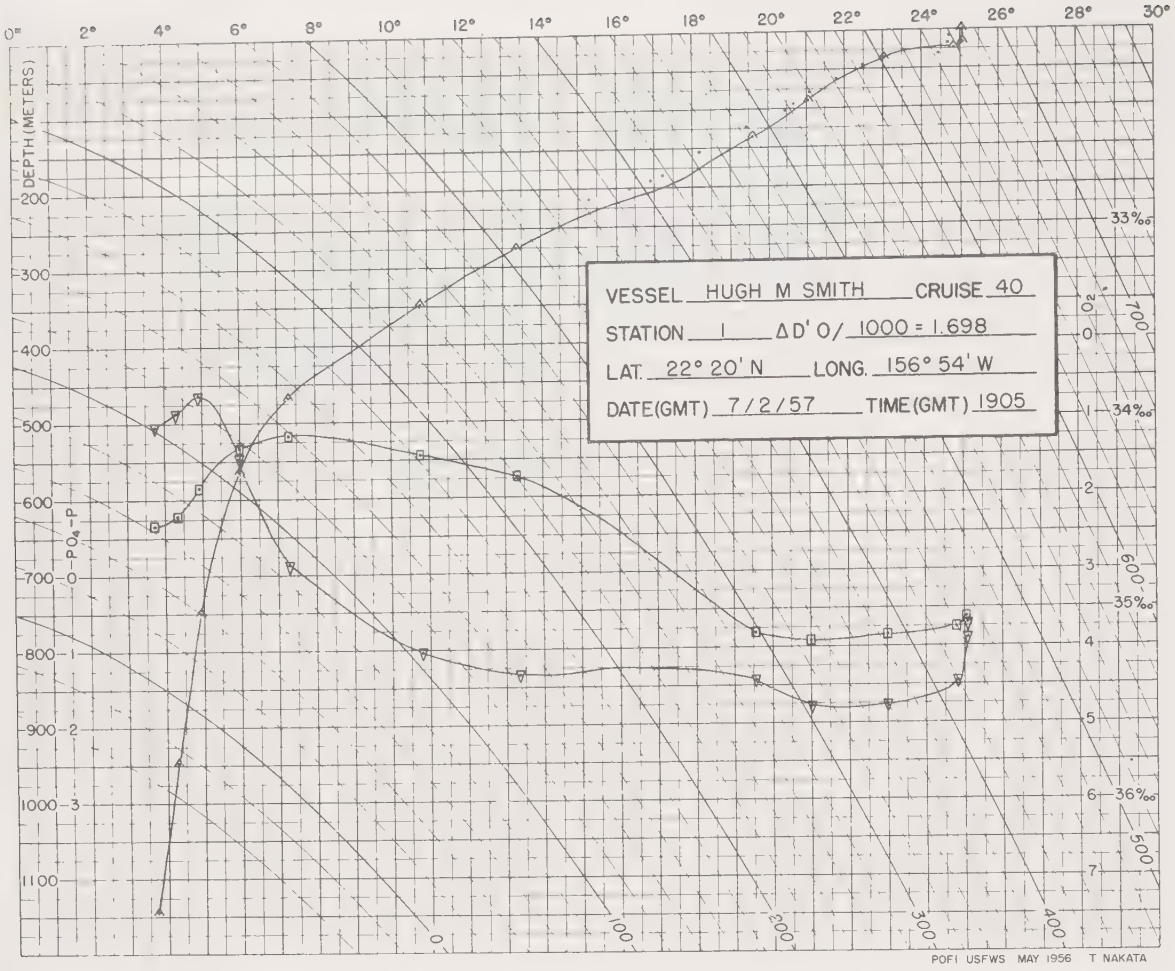
Explanatory code for tabulated data:

NG - The value or line is in error and is discarded.

NS - This water sample was lost.

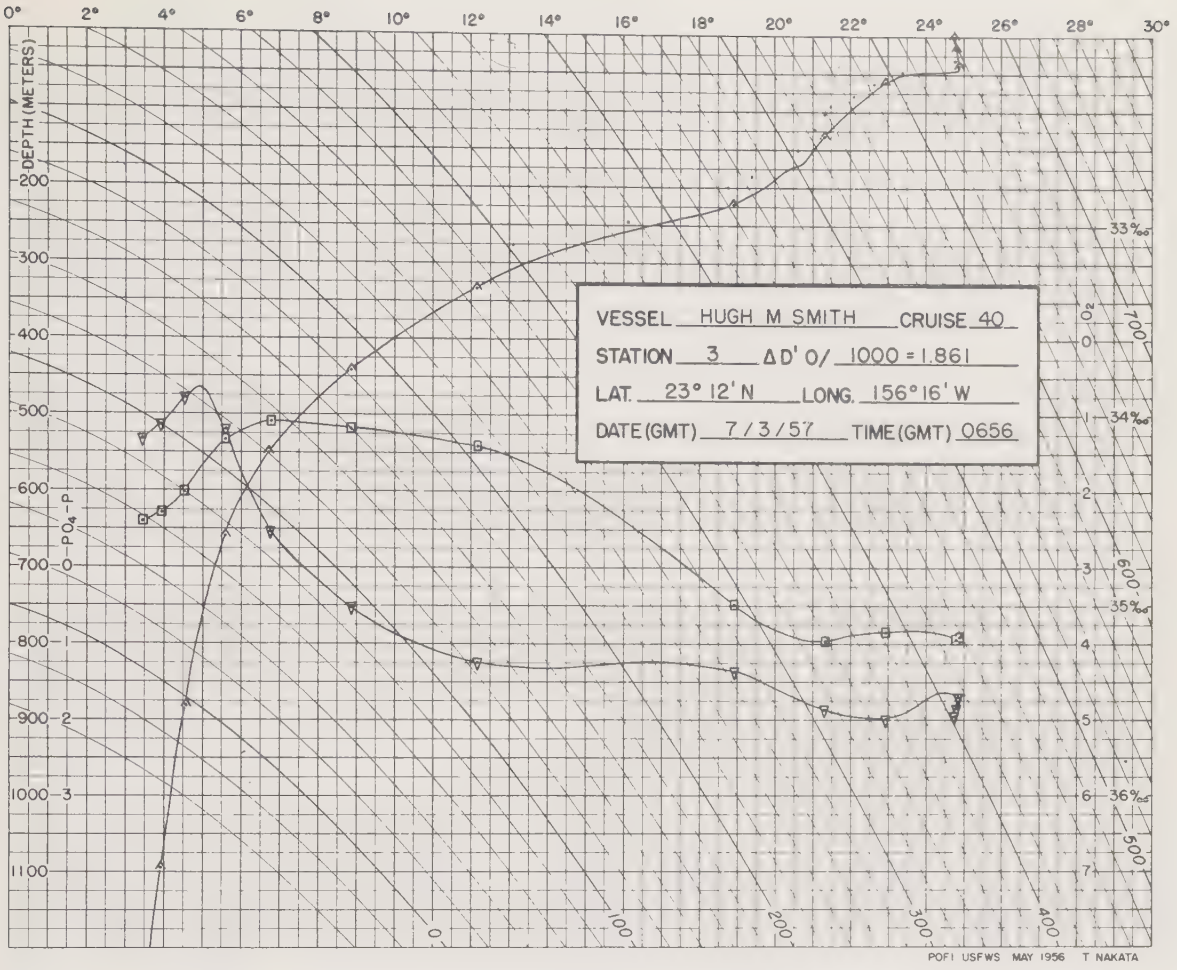
Q - The value seems questionable but was used in construction of the station curve.

P - The value is questionable and while carried was not used in drawing the station curve.


VESSEL HUGH M SMITH CRUISE 40
STATION 1 ΔD' O/ 1000 = 1.698
LAT. 22° 20' N LONG. 156° 54' W
DATE(GMT) 7/2/57 TIME(GMT) 1905
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

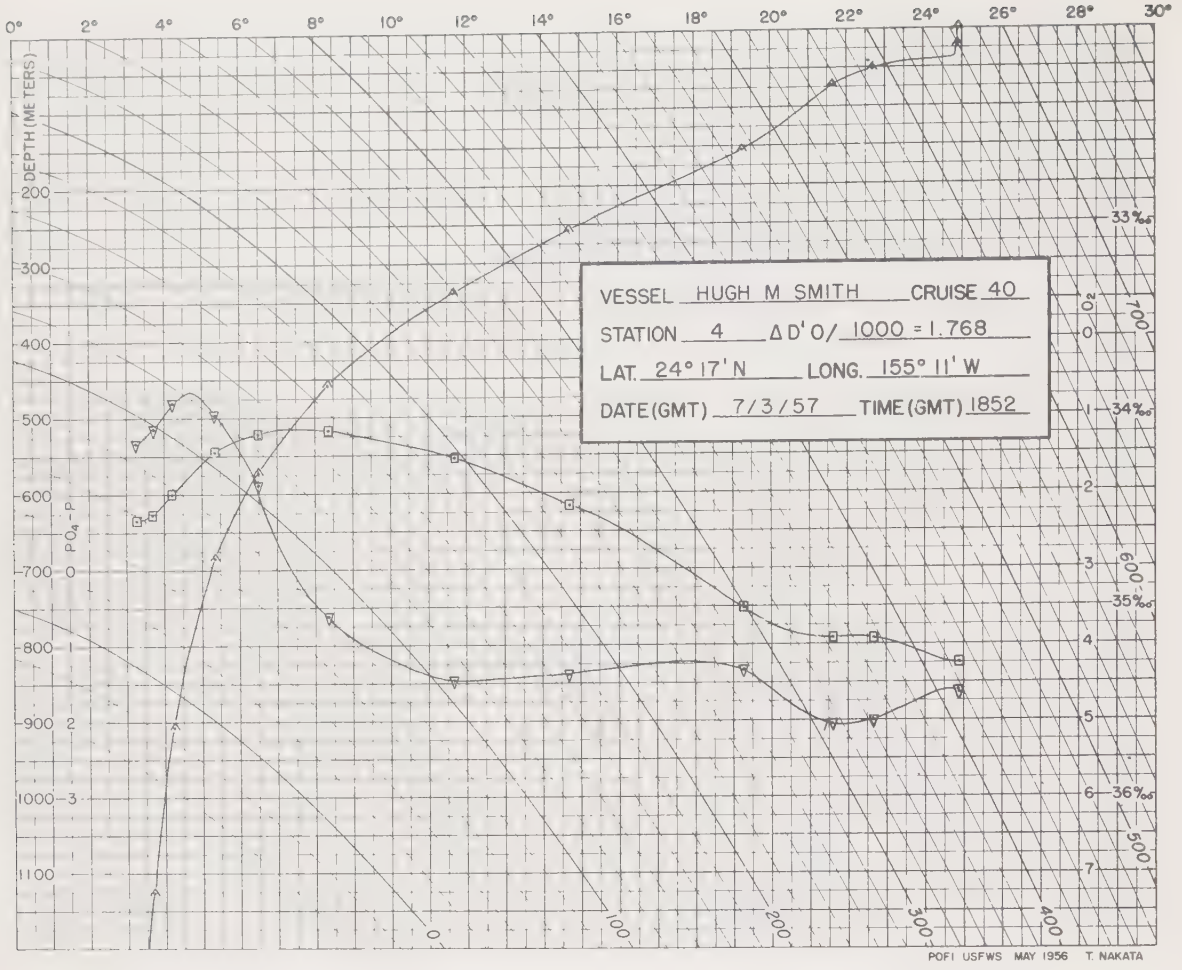
Weather: 02, cloud coverage 5. Wind: 080°, 21 kt. Sea: 5-8 ft. Wire angle: 55°, 40°.
BT slide: 1. Dry bulb: 77.7°F. Wet bulb: 71.3°F. Barometric pressure: 1021 mb.

	Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
	0	25.08	35.05	451.7	3.68	-
	16	25.09	35.07	450.4	3.90	-
	21	24.83	35.10	440.9	4.48	-
	32	23.02	35.14	386.8	4.76	-
	87	21.04	35.17	332.0	4.78	-
I	137	19.59	35.12	298.8	4.43	-
II	277	13.35	34.29	221.4	4.36	-
	349	10.81	34.18	183.5	4.04	-
	469	7.29	34.07	138.1	2.86	-
	564	5.98	34.14	116.3	1.46	-
	751	4.92	34.34	89.3	0.63	-
	948	4.32	34.49	71.8	0.88	-
	1146	3.74	34.54	62.4	1.06	-


VESSEL HUGH M SMITH CRUISE 40
STATION 3 ΔD' O/ 1000 = 1.861
LAT. 23° 12' N LONG. 156° 16' W
DATE (GMT) 7/3/57 TIME (GMT) 0656
DEPTH (METERS)
PO4 - P
POF1 USFWS MAY 1956 T NAKATA

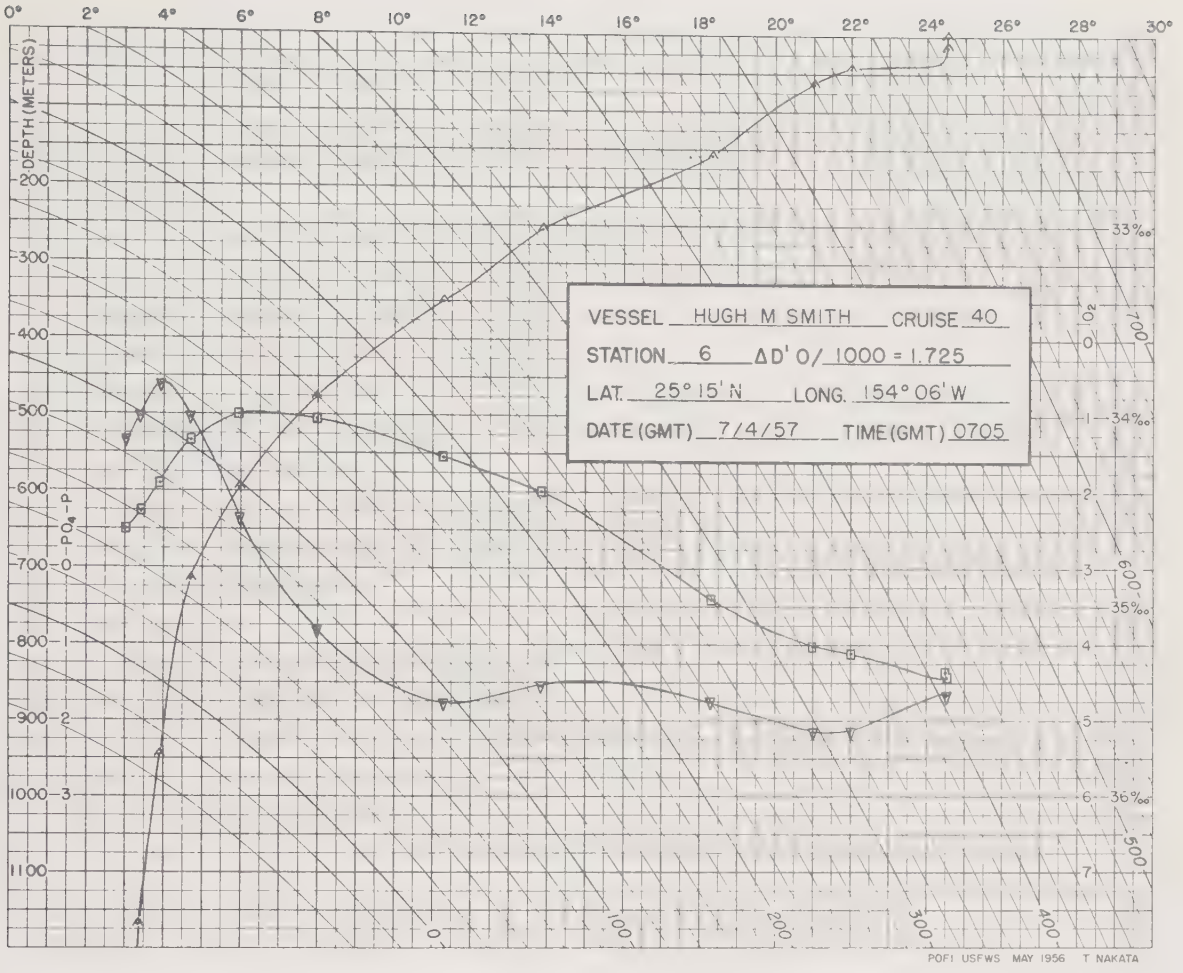
Weather: 02, cloud coverage 7. Wind: 060°, 22 kt. Sea: 3-5 ft. Wire angle: 30°.
BT slide: 6. Dry bulb: 76.8°F. Wet bulb: 70.3°F. Barometric pressure: 1021 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	24.78	35.16	435.0	4.94	-
14	24.80	35.17	434.9	4.86	-
37	24.86	35.16	437.4	4.70	-
60	22.92	35.14	384.0	4.98	-
131	21.31	35.19	337.6	4.86	-
222	18.94	34.99	292.4	4.37	-
334	12.18	34.16	208.9	4.23	-
441	8.86	34.07	160.5	3.52	-
551	6.76	34.04	133.4	2.52	-
659	5.60	34.13	112.7	1.20	-
880	4.56	34.40	81.0	0.78	-
1094	3.92	34.51	66.3	1.11	-
1304	3.42	34.56	58.0	1.32	-


VESSEL HUGH M SMITH CRUISE 40
STATION 4 ΔD' O/ 1000 = 1.768
LAT. 24° 17' N LONG. 155° 11' W
DATE (GMT) 7/3/57 TIME (GMT) 1852
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T. NAKATA

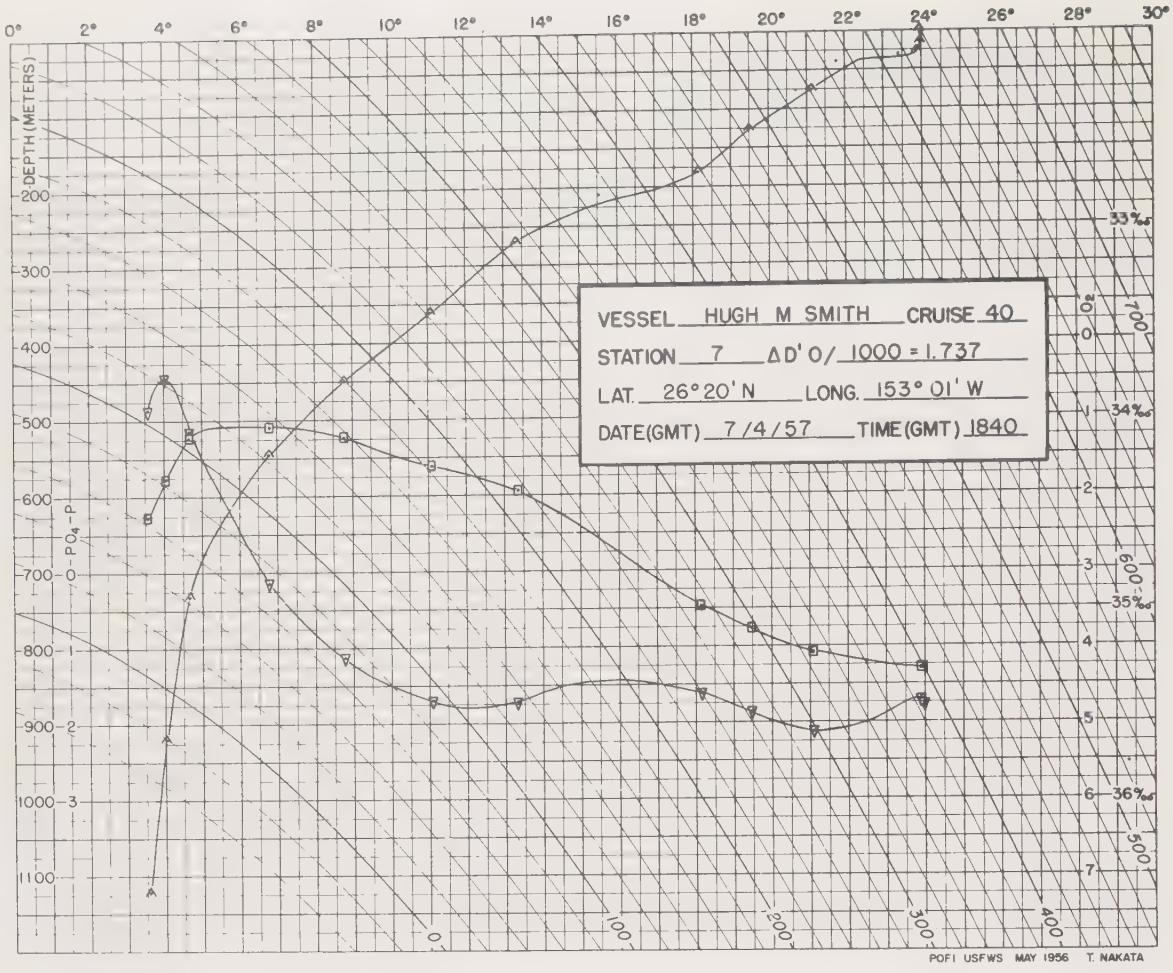
Weather: 02, cloud coverage 2. Wind: 060°, 17 kt. Sea: 1-3 ft. Wire angle: 17°.
BT slide: 10. Dry bulb: 77.2°F. Wet bulb: 72.8°F. Barometric pressure: 1019 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	24.88	35.30	427.8	4.63	-
20	24.86	35.30	427.2	4.61	-
51	22.64	35.17	374.3	5.01	-
72	21.61	35.17	346.9	5.05	-
154	19.26	35.01	298.6	4.33	-
257	14.70	34.47	235.1	4.38	-
339	11.67	34.22	195.4	4.46	-
458	8.37	34.07	153.2	3.61	-
572	6.54	34.09	127.0	1.89	-
685	5.36	34.18	106.2	0.96	-
907	4.24	34.40	77.7	0.80	-
1128	3.70	34.51	64.2	1.14	-
1339	3.24	34.54	57.8	1.33	-


VESSEL HUGH M SMITH CRUISE 40
STATION 6 ΔD' O/ 1000 = 1.725
LAT. 25° 15' N LONG. 154° 06' W
DATE (GMT) 7/4/57 TIME (GMT) 0705
DEPTH (METERS)
PO4-P
POF! USFWS MAY 1956 T NAKATA

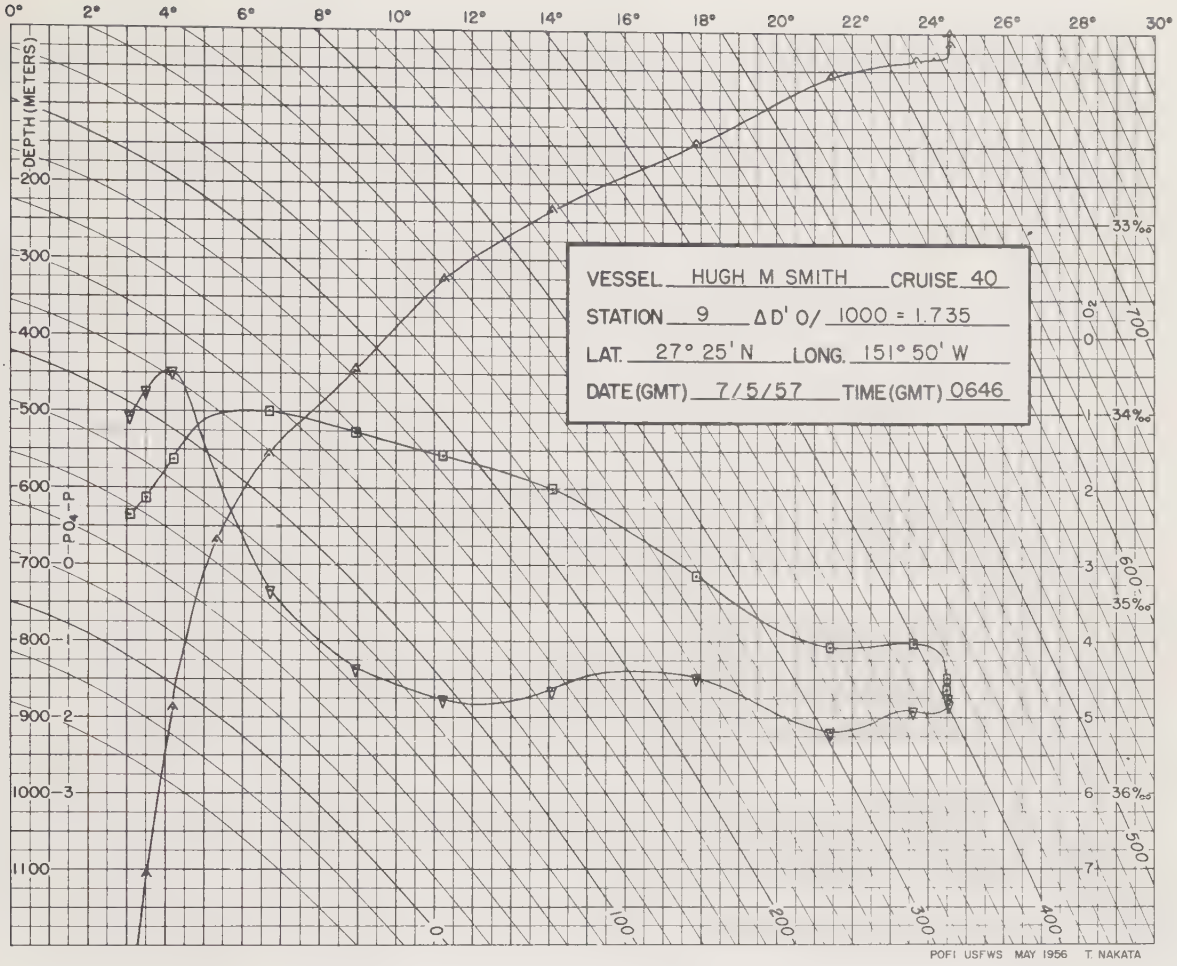
Weather: 02, cloud coverage 2. Wind: 080°, 16 kt. Sea: 1-3 ft. Wire angle: 06°.
BT slide: 14. Dry bulb: 76.6°F. Wet bulb: 71.3°F. Barometric pressure: 1019 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	24.50	35.35	413.3	4.67	-
15	24.52	35.37	412.5	4.65	-
42	21.96	35.25	350.3	5.13	-
63	20.98	35.21	327.5	5.15	-
159	18.31	34.96	279.3	4.77	-
255	13.85	34.40	223.2	4.53	-
351	11.28	34.22	188.7	4.78	-
476	7.98	34.02	151.2	3.82	-
596	5.96	34.00	126.5	2.34	-
715	4.72	34.14	102.2	1.03	-
944	3.91	34.36	77.5	0.61	-
1169	3.39	34.51	61.4	1.01	-
1380	3.02	34.60	51.3	1.34	-


VESSEL HUGH M SMITH CRUISE 40
STATION 7 ΔD' O/ 1000 = 1.737
LAT. 26°20' N LONG. 153° 01' W
DATE(GMT) 7/4/57 TIME(GMT) 1840
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T. NAKATA

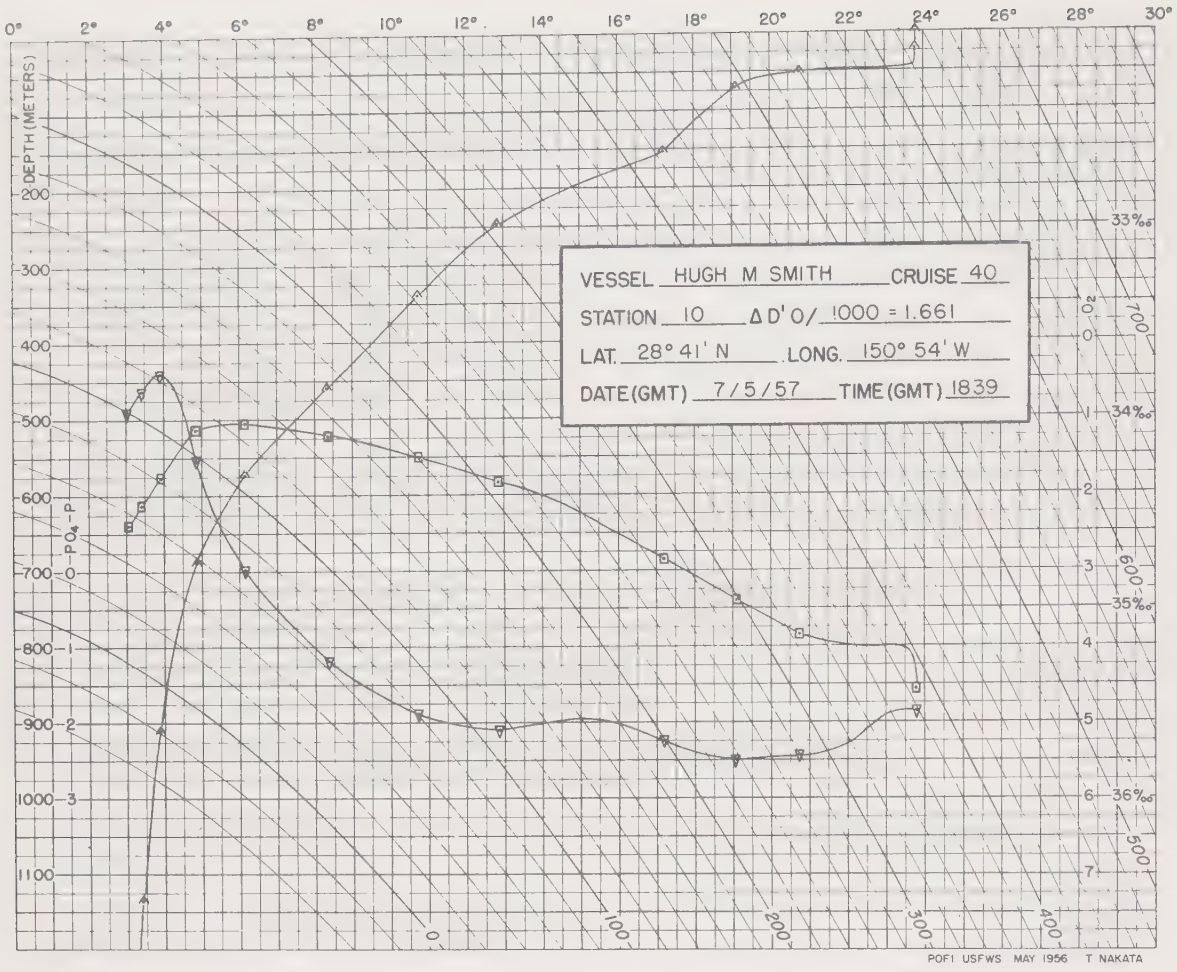
Weather: 02, cloud coverage 2. Wind: 070°, 11 kt. Sea: 1-3 ft. Wire angle: 27°.
BT slide: 17. Dry bulb: 75.3°F. Wet bulb: 70.8°F. Barometric pressure: 1023 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	23.96	35.32	400.1	4.76	-
13	23.96	35.32	400.1	4.73	-
26	23.87	35.32	397.4	4.70	-
75	21.09	35.23	328.9	5.12	-
128	19.47	35.10	297.2	4.86	-
181	18.15	34.99	273.3	4.60	-
269	13.35	34.38	214.8	4.72	-
362	11.09	34.25	183.0	4.70	-
450	8.80	34.09	158.1	4.13	-
545	6.81	34.04	134.1	3.14	-
732	4.68	34.09	105.5	1.15	-
920	4.04	34.31	82.5	0.44	-
1122	3.60	34.51	63.3	0.86	-


VESSEL HUGH M SMITH CRUISE 40
STATION 9 ΔD' O/ 1000 = 1.735
LAT. 27° 25' N LONG. 151° 50' W
DATE (GMT) 7/5/57 TIME (GMT) 0646
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T. NAKATA

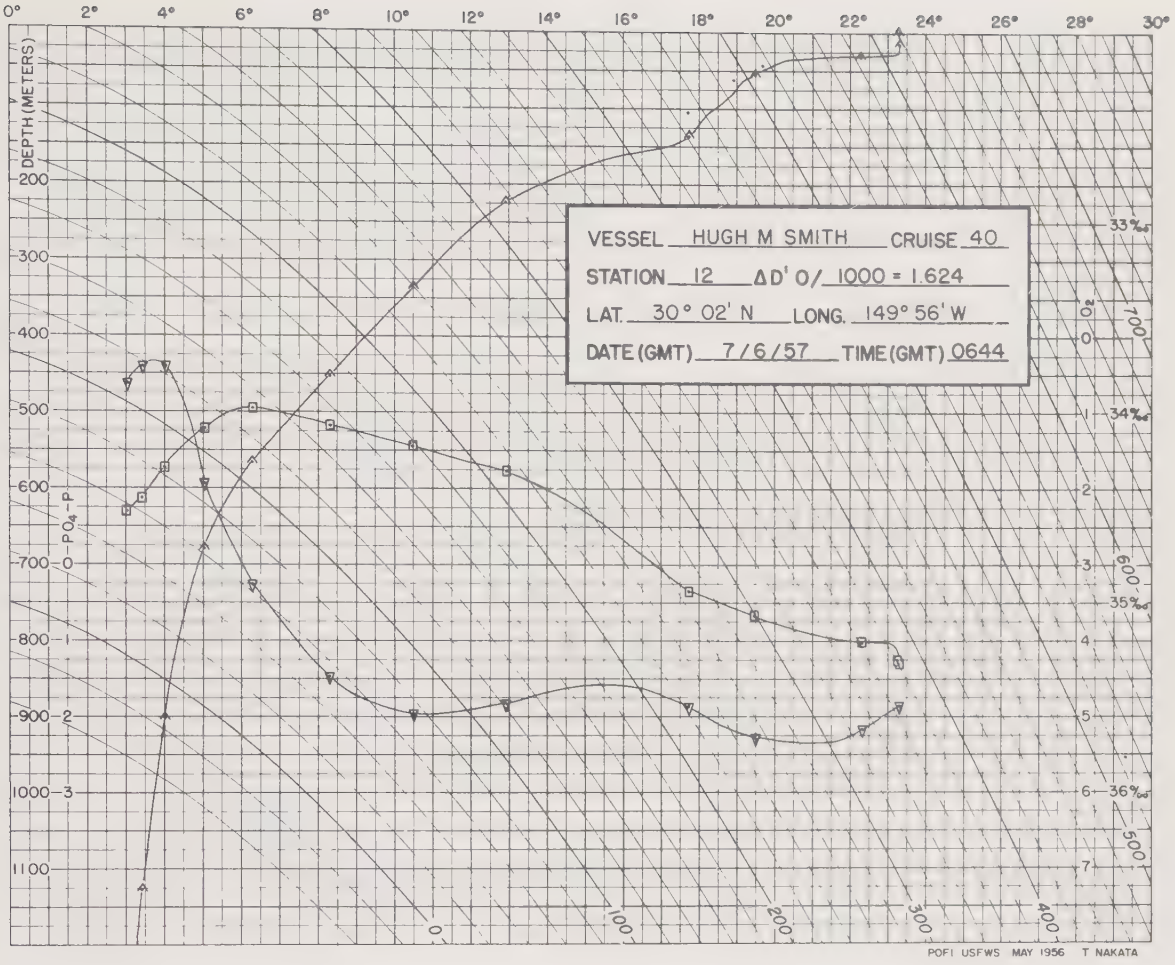
Weather: 03, cloud coverage 6. Wind: 090°, 15 kt. Sea: 1-3 ft. Wire angle: 19°.
BT slide: 22. Dry bulb: 75.3°F. Wet bulb: 70.2°F. Barometric pressure: 1025 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	24.54	35.46	406.6	4.75	-
14	24.55	35.39	411.9	4.80	-
34	23.62	35.21	398.3	4.92	-
58	21.40	35.23	337.0	5.18	-
146	17.88	34.85	277.1	4.46	-
236	14.08	34.40	227.7	4.65	-
327	11.23	34.23	186.9	4.76	-
444	8.96	34.11	159.1	4.36	-
557	6.68	34.00	135.3	3.33	-
669	5.32	NS	-	NS	-
888	4.18	34.25	88.3	0.49	-
1108	3.53	34.45	67.2	0.73	-
1316	3.08	34.54	56.3	1.07	-


VESSEL HUGH M SMITH CRUISE 40
STATION 10 ΔD' O/ 1000 = 1.661
LAT. 28° 41' N LONG. 150° 54' W
DATE (GMT) 7/5/57 TIME (GMT) 1839
DEPTH (METERS)
PO4-P
O2
POFI USFWS MAY 1956 T NAKATA

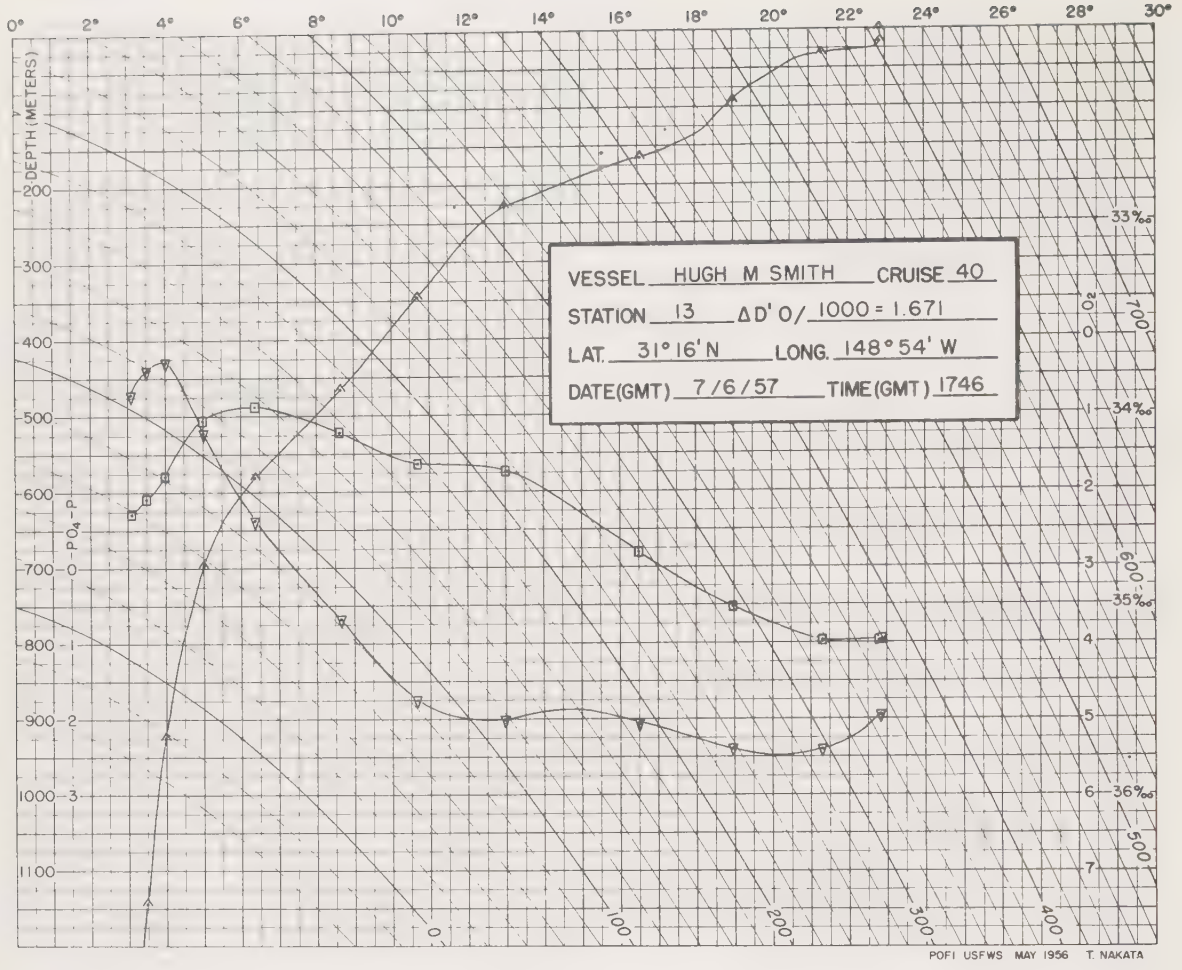
Weather: 02, cloud coverage 8. Wind: 070°, 18 kt. Sea: 3-5 ft. Wire angle: 19°.
BT slide: 26. Dry bulb: 73.8°F. Wet bulb: 69.6°F. Barometric pressure: 1026 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	23.78	35.43	387.0	4.86	-
20	23.78	35.43	387.0	4.85	-
51	20.74	35.14	326.5	5.44	-
71	19.08	34.96	298.1	5.49	-
153	17.20	34.74	269.5	5.26	-
247	12.85	34.33	208.9	5.10	-
339	10.75	34.20	181.0	4.88	-
459	8.37	34.09	151.7	4.19	-
574	6.18	34.02	127.6	2.98	-
688	4.86	34.05	110.4	1.54	-
913	3.89	34.31	80.9	0.40	-
1137	3.41	34.45	66.2	0.63	-
1353	3.04	34.56	54.5	0.91	-


VESSEL HUGH M SMITH CRUISE 40
STATION 12 ΔD' O/ 1000 = 1.624
LAT. 30° 02' N LONG. 149° 56' W
DATE (GMT) 7/6/57 TIME (GMT) 0644
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T. NAKATA

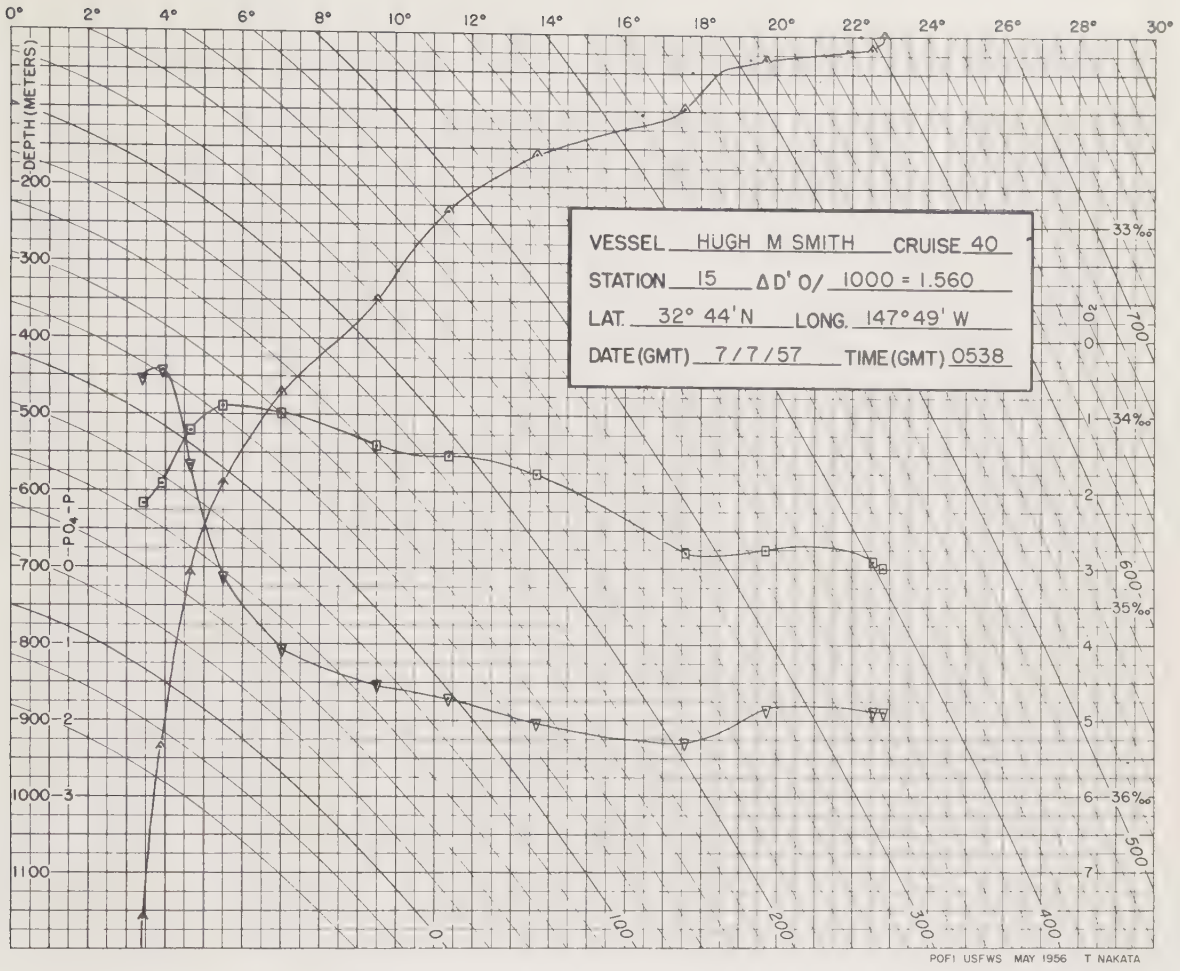
Weather: 50, cloud coverage 8. Wind: 070°, 14 kt. Sea: 1-3 ft. Wire angle: 17°.
BT slide: 30. Dry bulb: 71.8°F. Wet bulb: 66.8°F. Barometric pressure: 1026 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	23.27	35.32	380.8	4.86	-
15	23.30	35.30	382.9	4.88	-
30	22.30	35.21	362.1	5.17	-
54	19.49	35.07	299.9	5.29	-
136	17.74	34.94	267.5	4.86	-
222	12.92	34.31	211.6	4.82	-
335	10.46	34.18	177.5	4.95	-
452	8.31	34.07	152.5	4.45	-
566	6.32	33.98	132.7	3.24	-
679	5.04	34.09	109.3	1.94	-
903	4.00	34.29	83.6	0.41	-
1127	3.42	34.45	66.3	0.41	-
1342	3.05	34.52	57.5	0.63	-


VESSEL HUGH M SMITH CRUISE 40
STATION 13 ΔD' O/ 1000 = 1.671
LAT. 31° 16' N LONG. 148° 54' W
DATE(GMT) 7/6/57 TIME(GMT) 1746
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T. NAKATA

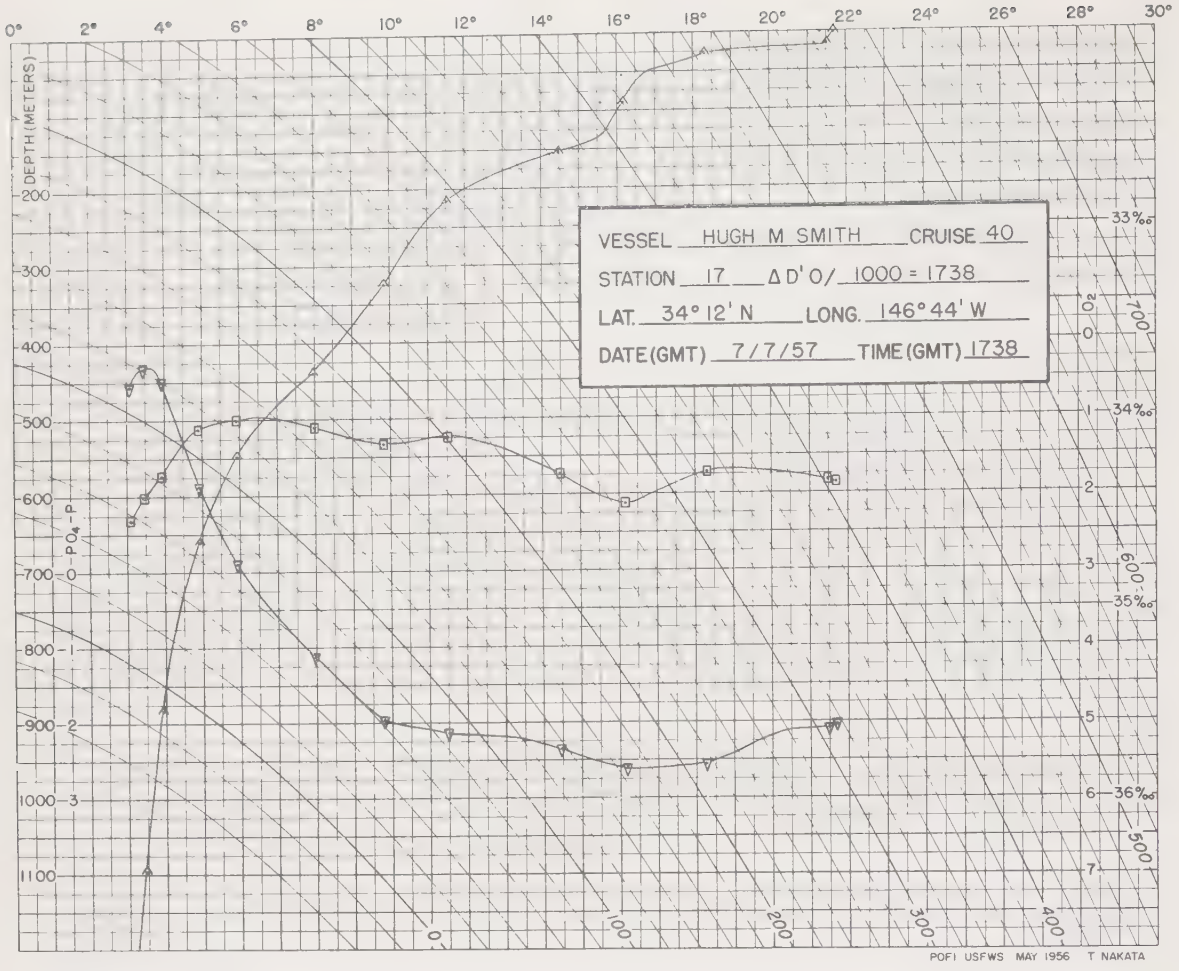
Weather: 02, cloud coverage 8. Wind: 010°, 10 kt. Sea: 1-3 ft. Wire angle: 13°.
BT slide: 33. Dry bulb: 72.5°F. Wet bulb: 65.3°F. Barometric pressure: 1026 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	22.82	35.19	377.6	4.94	-
15	22.83	35.19	377.8	4.93	-
30	21.31	35.19	337.5	5.39	-
92	18.96	35.01	291.4	5.40	-
164	16.54	34.72	256.1	5.04	-
227	12.98	34.29	214.1	5.02	-
344	10.66	34.25	175.7	4.74	-
465	8.65	34.09	155.9	3.66	-
581	6.38	33.95	135.5	2.36	-
697	5.00	34.02	114.1	1.20	-
923	4.00	34.31	82.1	0.30	-
1144	3.48	34.43	68.2	0.40	-
1356	3.08	34.52	57.9	0.70	-


VESSEL HUGH M SMITH CRUISE 40
STATION 15 ΔD' O/ 1000 = 1.560
LAT. 32° 44'N LONG. 147°49' W
DATE (GMT) 7/7/57 TIME (GMT) 0538
DEPTH (METERS)
PO4-P
POF1 USFWS MAY 1956 T NAKATA

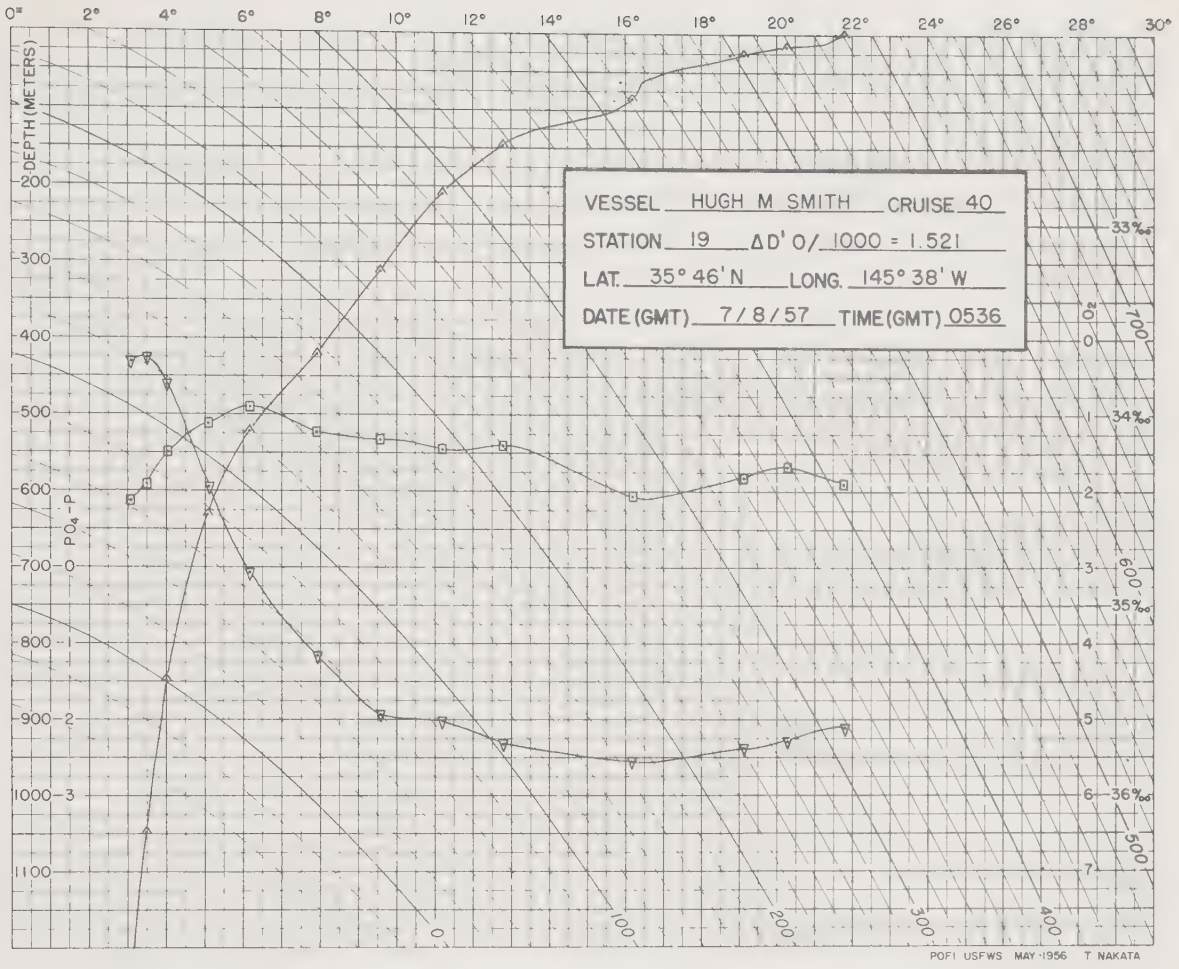
Weather: 02, cloud coverage 2. Wind: 080°, 07 kt. Sea: 1-3 ft. Wire angle: 09°.
BT slide: 38. Dry bulb: 72.7°F. Wet bulb: 68.3°F. Barometric pressure: 1026 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, μg at./L.
0	22.82	34.79	406.6	4.90	-
16	22.56	34.76	401.7	4.87	-
31	19.73	34.70	332.6	4.85	-
95	17.58	34.72	279.6	5.29	-
159	13.68	34.31	226.3	5.03	-
233	11.38	34.22	190.4	4.71	-
351	9.53	34.16	164.2	4.53	-
473	7.02	34.00	139.5	4.05	-
591	5.48	33.96	124.1	3.11	-
708	4.64	34.09	105.3	1.66	-
935	3.92	34.36	77.7	0.42	-
1159	3.42	34.47	64.8	0.52	-
(1368)	NS	34.52	-	0.93	-


VESSEL HUGH M SMITH CRUISE 40
STATION 17 Δ D' O/ 1000 = 1738
LAT. 34° 12' N LONG. 146° 44' W
DATE (GMT) 7/7/57 TIME (GMT) 1738
DEPTH (METERS)
PO4-P
POF1 USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 1. Wind: 020°, 08 kt. Sea: < 1 ft. Wire angle: 06°.
BT slide: 41. Dry bulb: 70.0°F. Wet bulb: 65.8°F. Barometric pressure: 1025 mb.

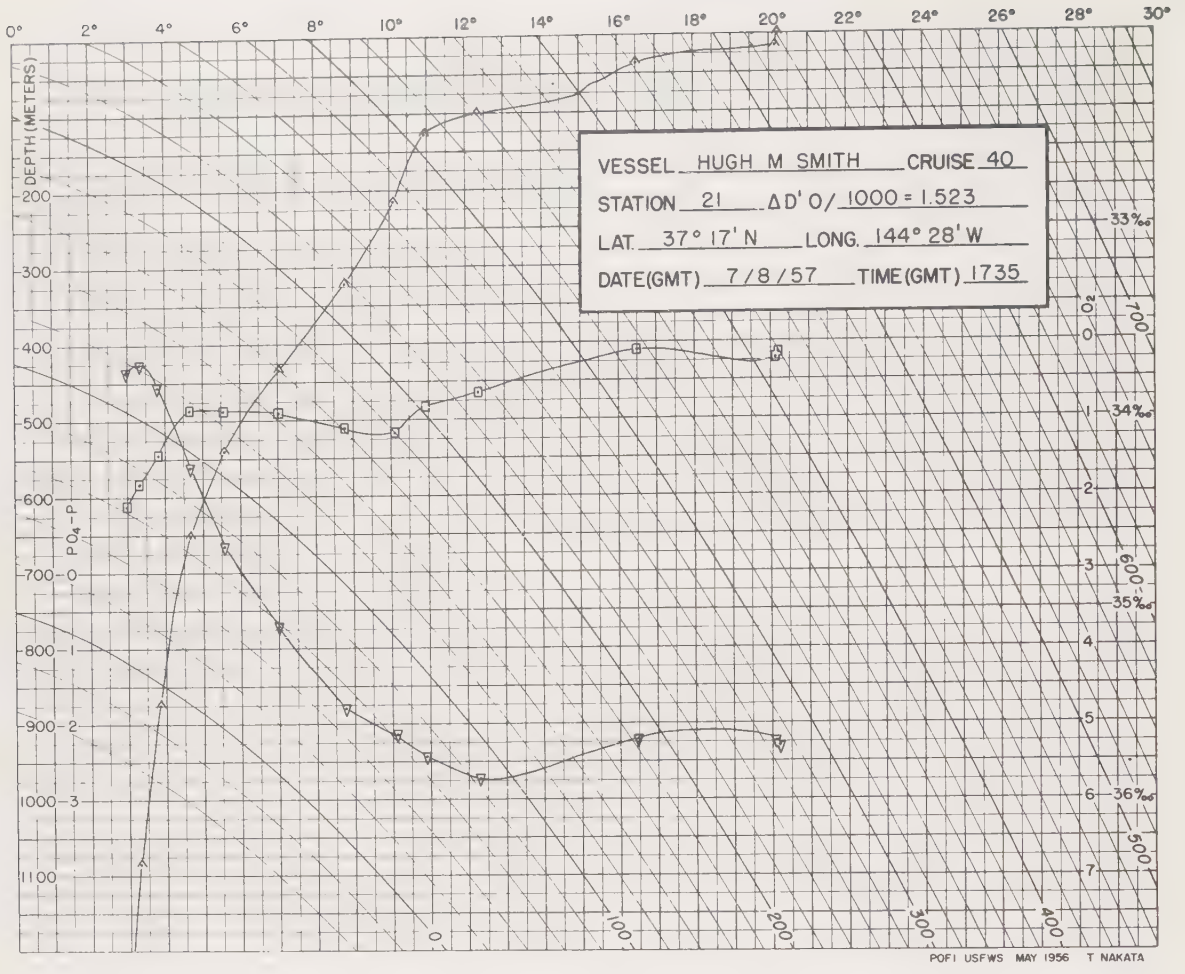
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	21.66	34.34	408.0	5.05	-
15	21.45	34.33	403.3	5.08	-
26	18.28	34.29	327.2	5.54	-
89	16.15	34.45	267.1	5.60	-
152	14.46	34.29	243.3	5.34	-
215	11.51	34.09	202.2	5.12	-
323	9.82	34.13	170.9	4.95	-
438	7.96	34.04	149.5	4.11	-
546	5.91	34.00	126.1	2.87	-
659	4.90	34.04	111.6	1.85	-
881	3.92	34.29	82.9	0.49	-
1094	3.42	34.40	70.0	0.31	-
1309	3.06	34.52	57.7	0.54	-


VESSEL HUGH M SMITH CRUISE 40
STATION 19 ΔD' O/ 1000 = 1.521
LAT. 35° 46' N LONG. 145° 38' W
DATE (GMT) 7/8/57 TIME (GMT) 0536
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 03, cloud coverage 2. Wind: 250°, 09 kt. Sea: < 1 ft. Wire angle: 14°.
BT slide: 46. Dry bulb: 71.3°F. Wet bulb: 66.8°F. Barometric pressure: 1025 mb.

Depth, m.	^{o}T, °C.	^{o}S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	21.78	34.36	409.8	5.11	0.40
15	20.26	34.27	377.1	5.29	0.47
26	19.12	34.33	344.5	5.37	0.15
85	16.16	34.43	268.9	5.55	0.26
146	12.80	34.16	220.4	5.32	0.63
209	11.20	34.18	190.2	5.02	0.82
311	9.58	34.13	167.2	4.93	1.17
420	7.92	34.09	145.3	4.17	1.48
522	6.19	33.96	132.2	3.06	0.98
632	5.10	34.05	113.0	1.94	2.58
846	4.04	34.20	90.8	0.59	3.25
1048	3.47	34.36	73.4	0.26	3.41
1260	3.11	34.45	63.5	0.31	1.67*
1260					1.42*

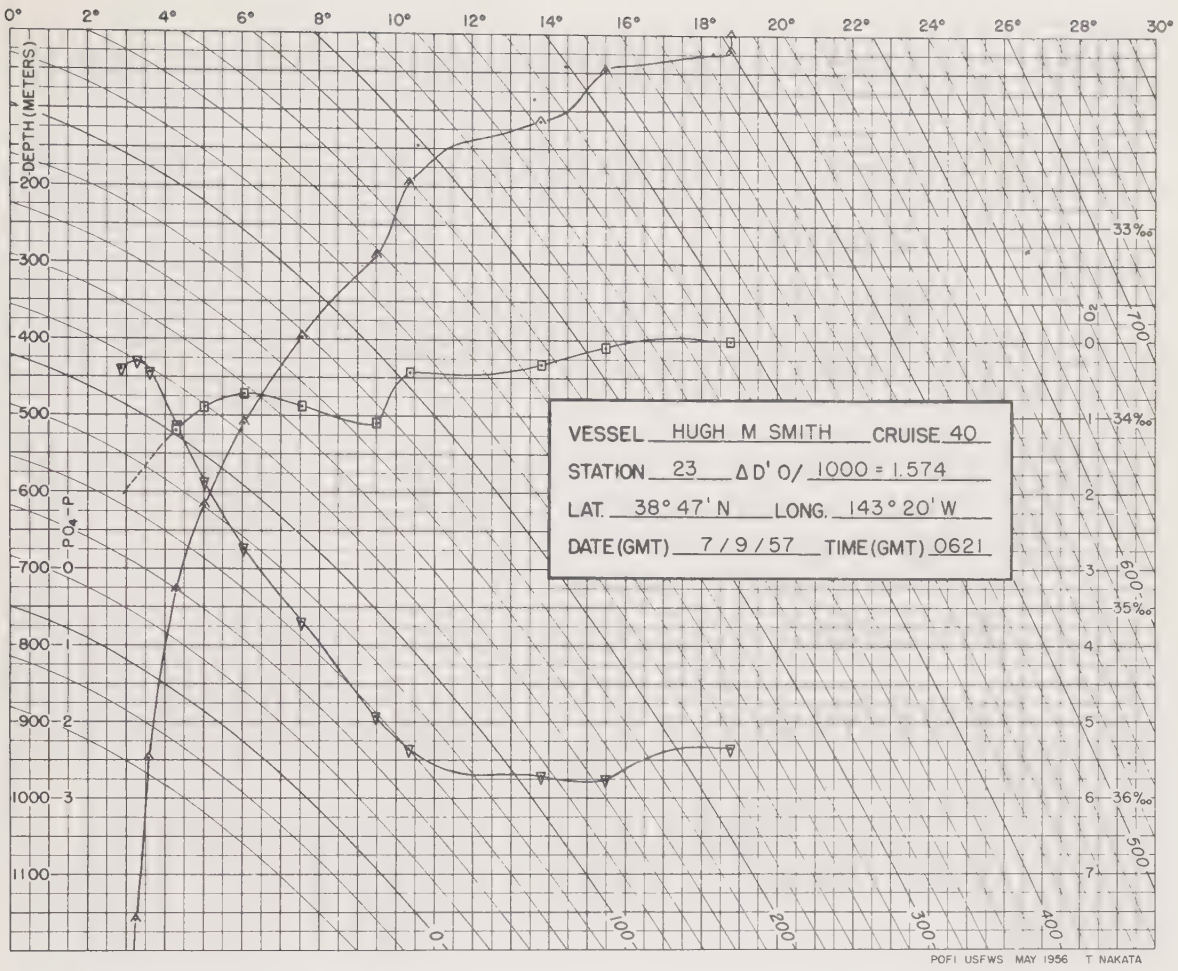
* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 21 ΔD' O/ 1000 = 1.523
LAT. 37° 17' N LONG. 144° 28' W
DATE(GMT) 7/8/57 TIME(GMT) 1735
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 1. Wind: 270°, 10 kt. Sea: 1-3 ft. Wire angle: 09°.
BT slide: 49. Dry bulb: 68.7°F. Wet bulb: 66.6°F. Barometric pressure: 1023 mb.

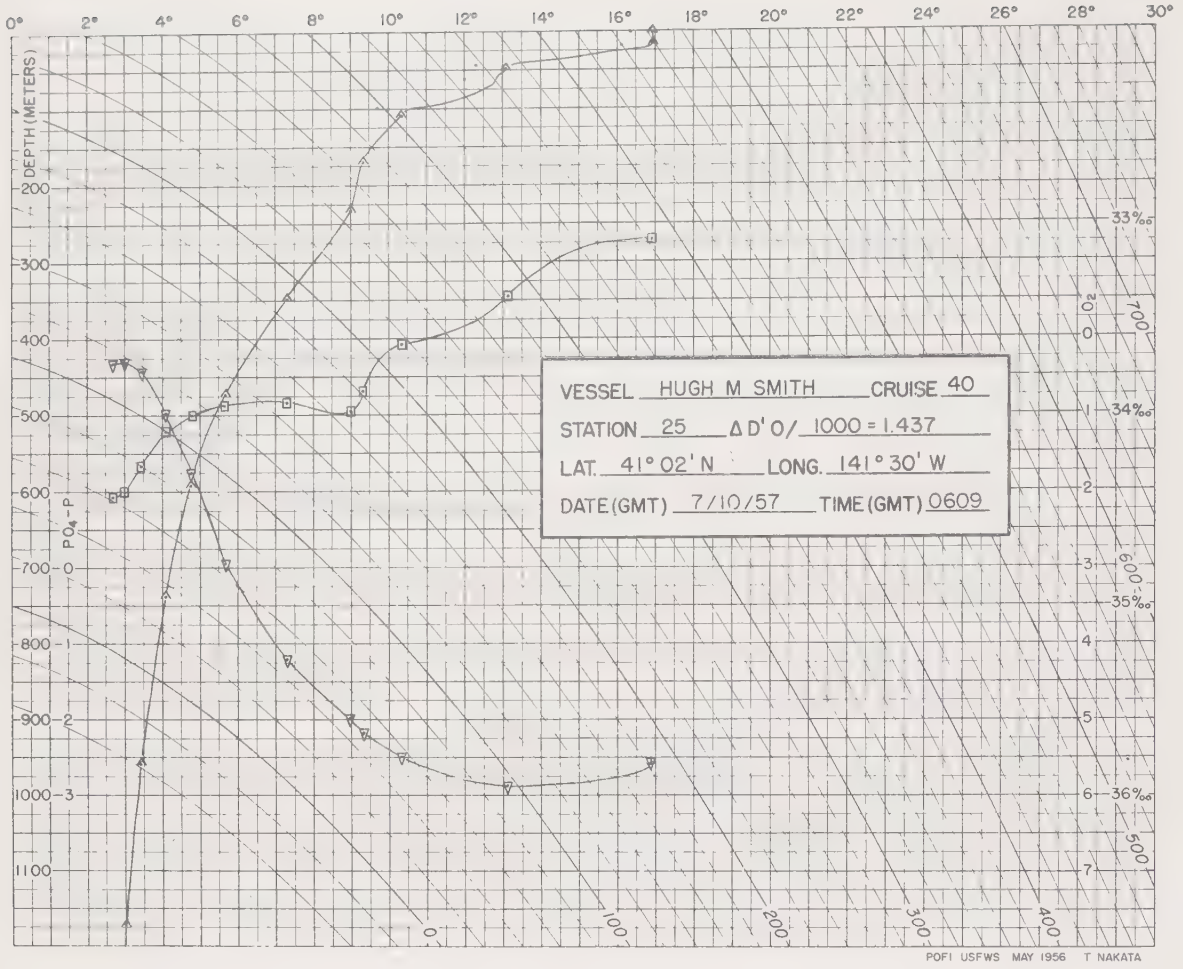
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	20.18	33.66	419.3	5.29	0.20
16	20.12	33.68	416.2	5.24	0.31
37	16.46	33.64	333.0	5.22	0.02
100	12.32	33.86	233.4	5.72	0.47
126	10.92	33.93	204.5	5.43	0.75
215	10.08	34.07	179.5	5.15	0.90
322	8.79	34.04	161.6	4.79	0.61
434	7.02	33.96	143.1	3.70	0.80
542	5.58	33.95	126.0	2.65	0.70
653	4.67	33.95	116.0	1.62	0.93
874	3.83	34.18	90.3	0.56	3.16
1084	3.34	34.33	74.6	0.27	2.56
1295	2.98	34.45	62.0	0.37	0.98 *
1295					0.92 *

* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 23 ΔD' O/ 1000 = 1.574
LAT. 38° 47' N LONG. 143° 20' W
DATE (GMT) 7/9/57 TIME (GMT) 0621
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 03, cloud coverage 8. Wind: 240°, 20 kt. Sea: 3-5 ft. Wire angle: 11°.
BT slide: 53A. Dry bulb: 67.8°F. Wet bulb: 66.3°F. Barometric pressure: 1019 mb.

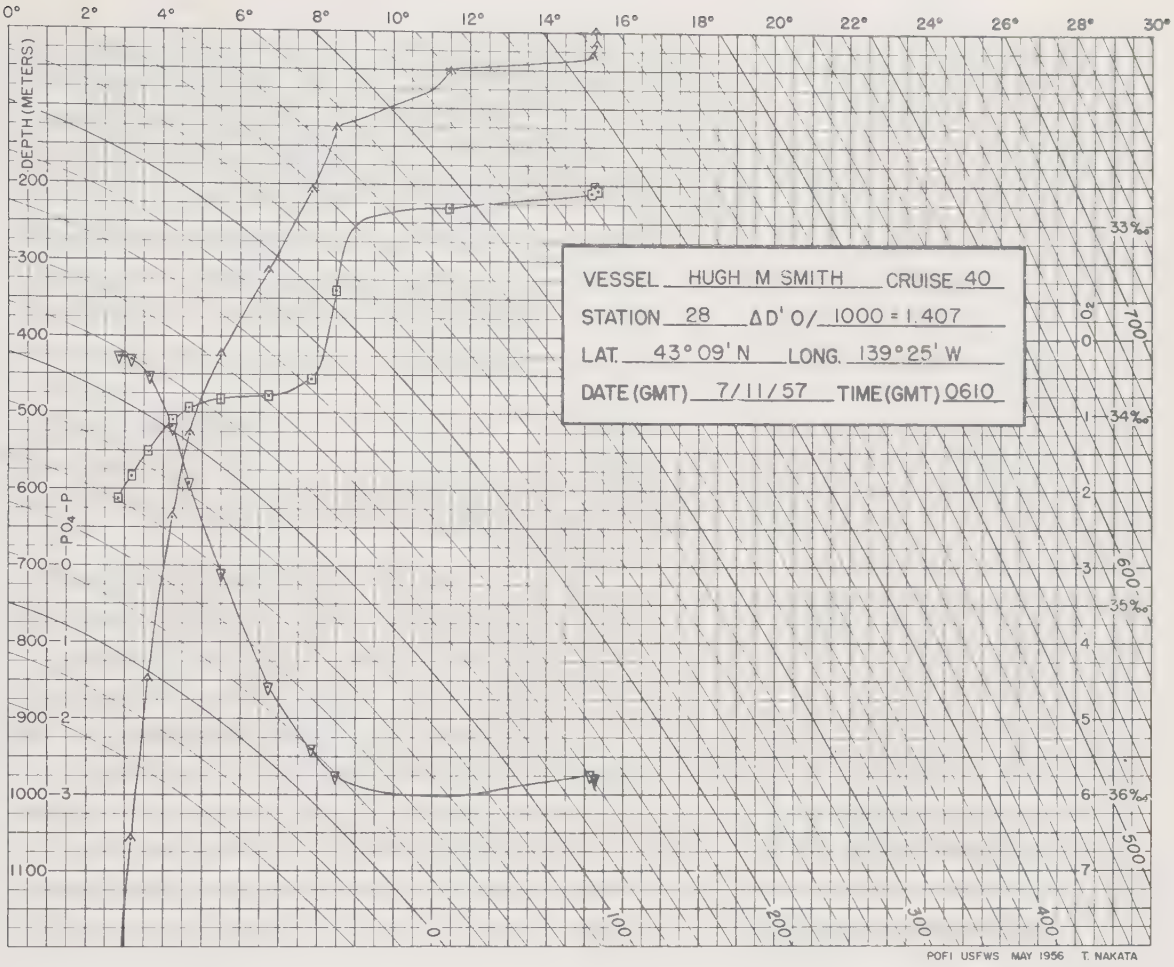
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	18.78	33.60	389.2	5.34	0.37
20	18.78	33.60	389.2	5.34	0.42
45	15.47	33.64	311.5	5.78	0.41
113	13.79	33.73	270.9	5.72	NS
196	10.36	33.77	206.1	5.35	0.76
291	9.48	34.04	172.3	4.93	NS
397	7.58	33.95	151.1	3.70	NS
510	6.04	33.89	135.9	2.74	0.40
617	5.02	33.96	119.0	1.88	NS
729	4.32	34.08	102.7	1.12	1.38
949	3.60	34.24	83.7	0.44	2.30
1160	3.25	34.42	66.9	0.29	NS
1370	2.90	34.46	60.8	0.42	1.81


VESSEL HUGH M SMITH CRUISE 40
STATION 25 Δ D' O/ 1000 = 1.437
LAT. 41° 02' N LONG. 141° 30' W
DATE (GMT) 7/10/57 TIME (GMT) 0609
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 01, cloud coverage 7. Wind: 020°, 21 kt. Sea: 5-8 ft. Wire angle: 05°.
BT slide: 62. Dry bulb: 62.3°F. Wet bulb: 60.0°F. Barometric pressure: 1020 mb.

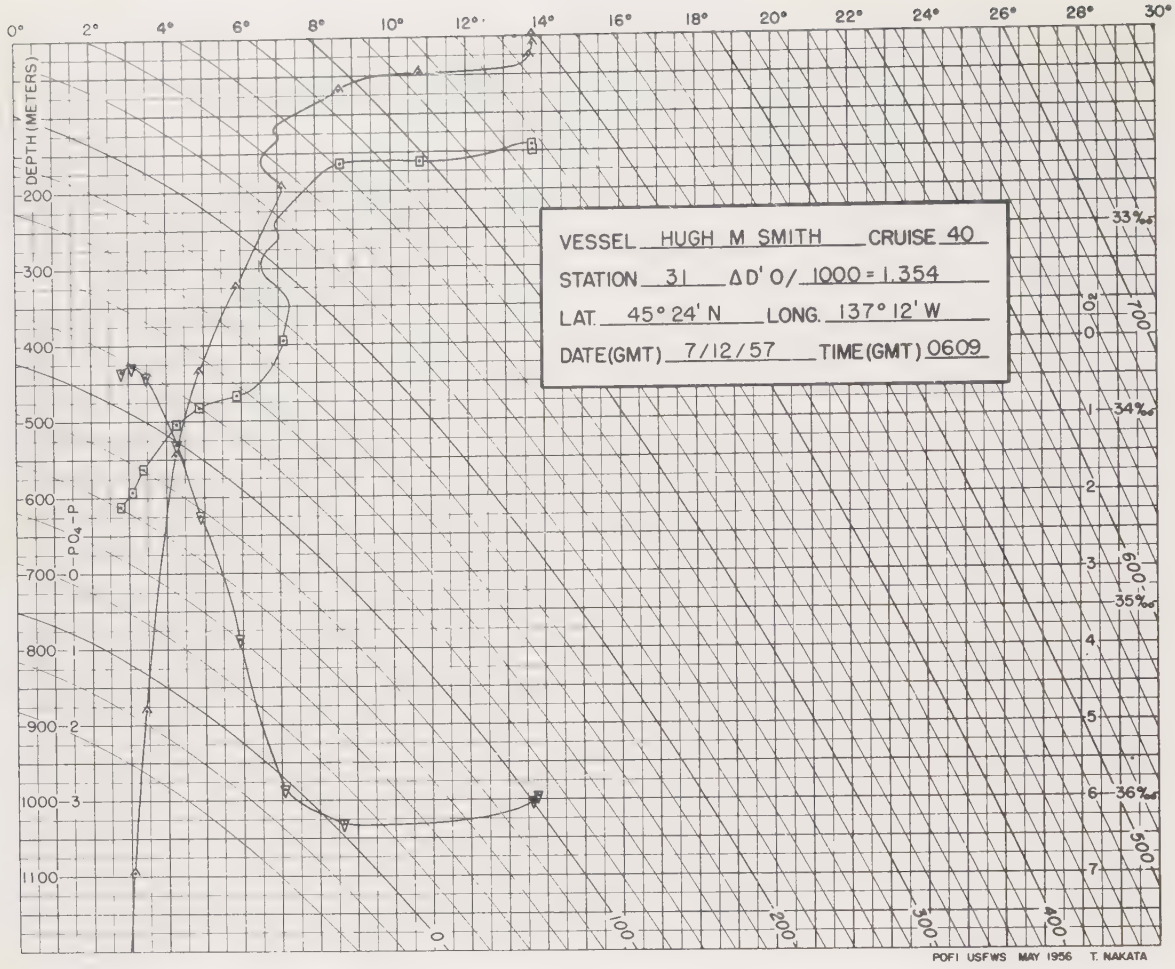
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	16.92	33.08	384.0	5.55	0.36
16	16.93	33.08	384.1	5.60	0.40
47	13.11	33.38	283.3	5.87	0.26
109	10.34	33.63	216.3	5.50	0.79
168	9.34	33.87	182.9	5.18	0.72
231	8.99	33.98	169.0	4.98	0.89
348	7.30	33.93	149.0	4.20	0.80
473	5.68	33.95	127.0	2.95	0.89
593	4.75	34.00	113.0	1.75	1.37
738	4.08	34.09	99.4	0.97	2.67
959	3.44	34.27	80.0	0.43	2.91
1171	3.00	34.40	66.1	0.30	2.92
1386	2.70	34.43	61.5	0.32	1.79*
1386					1.60*

* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.



Weather: 03, cloud coverage 8. Wind: 280°, 10 kt. Sea: 1-3 ft. Wire angle: 14°.
BT slide: 73. Dry bulb: 57.5°F. Wet bulb: 53.6°F. Barometric pressure: 1023 mb.

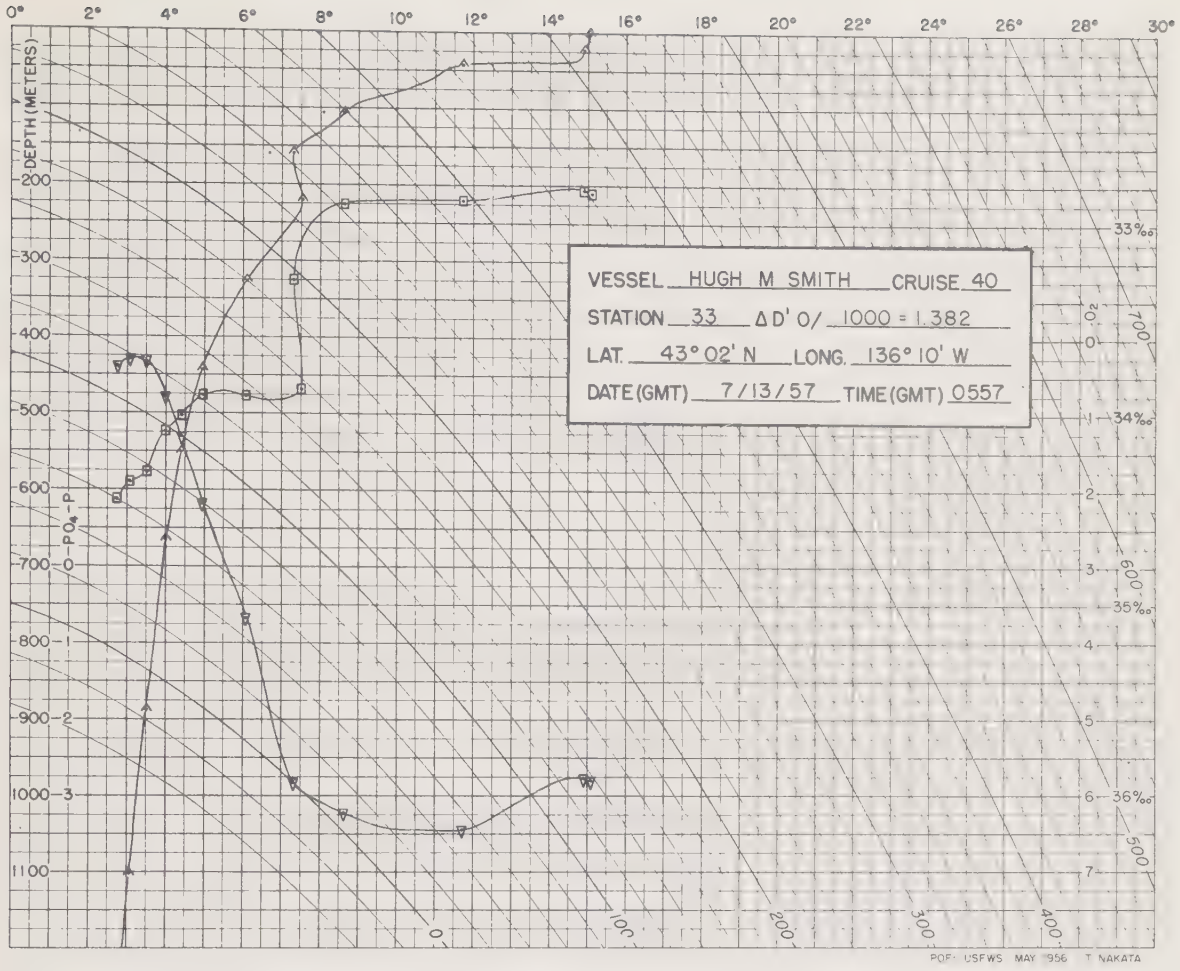
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, μg at./L.
0	15.27	32.81	368.3	5.81	0.41
15	15.30	32.83	367.5	5.79	0.38
30	15.18	32.84	364.0	5.76	0.38
51	11.45	32.92	287.1	NG	0.54
128	8.49	33.36	207.8	5.75	1.31
210	7.84	33.82	164.5	5.40	1.31
315	6.74	33.91	143.1	4.59	2.00
425	5.49	33.93	126.4	3.10	2.12
529	4.66	33.98	113.8	1.91	2.10
637	4.22	34.04	104.6	1.20	3.06
850	3.60	34.20	86.7	0.52	3.28
1058	3.17	34.33	72.8	0.31	3.61
1270	2.84	34.45	61.1	0.28	1.66


VESSEL HUGH M SMITH CRUISE 40
STATION 31 ΔD' O/ 1000 = 1.354
LAT. 45° 24' N LONG. 137° 12' W
DATE(GMT) 7/12/57 TIME(GMT) 0609
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T. NAKATA

Weather: 50, cloud coverage 8. Wind: 150°, 14 kt. Sea: 1-3 ft. Wire angle: 07°.
BT slide: 83. Dry bulb: 56.9°F. Wet bulb: 56.4°F. Barometric pressure: 1013 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	13.76	32.57	355.4	5.96	0.59
11	13.75	32.60	353.0	5.96	0.54
26	13.66	32.56	354.1	6.02	0.48
47	10.76	32.65	295.4	NG	0.77
68	8.64	32.66	262.0	6.33	1.25
194	7.11	33.58	172.7	5.85	1.71
324	5.88	33.87	135.3	3.87	1.61
437	4.88	33.93	119.9	2.24	2.15
545	4.28	34.02	106.6	1.31	1.57
659	3.92	34.11	96.5	NG	2.63
881	3.42	34.25	81.3	0.43	2.87
1096	3.06	34.38	68.3	0.30	2.90
1313	2.80	34.45	60.8	0.35	2.42*
1313					2.30*

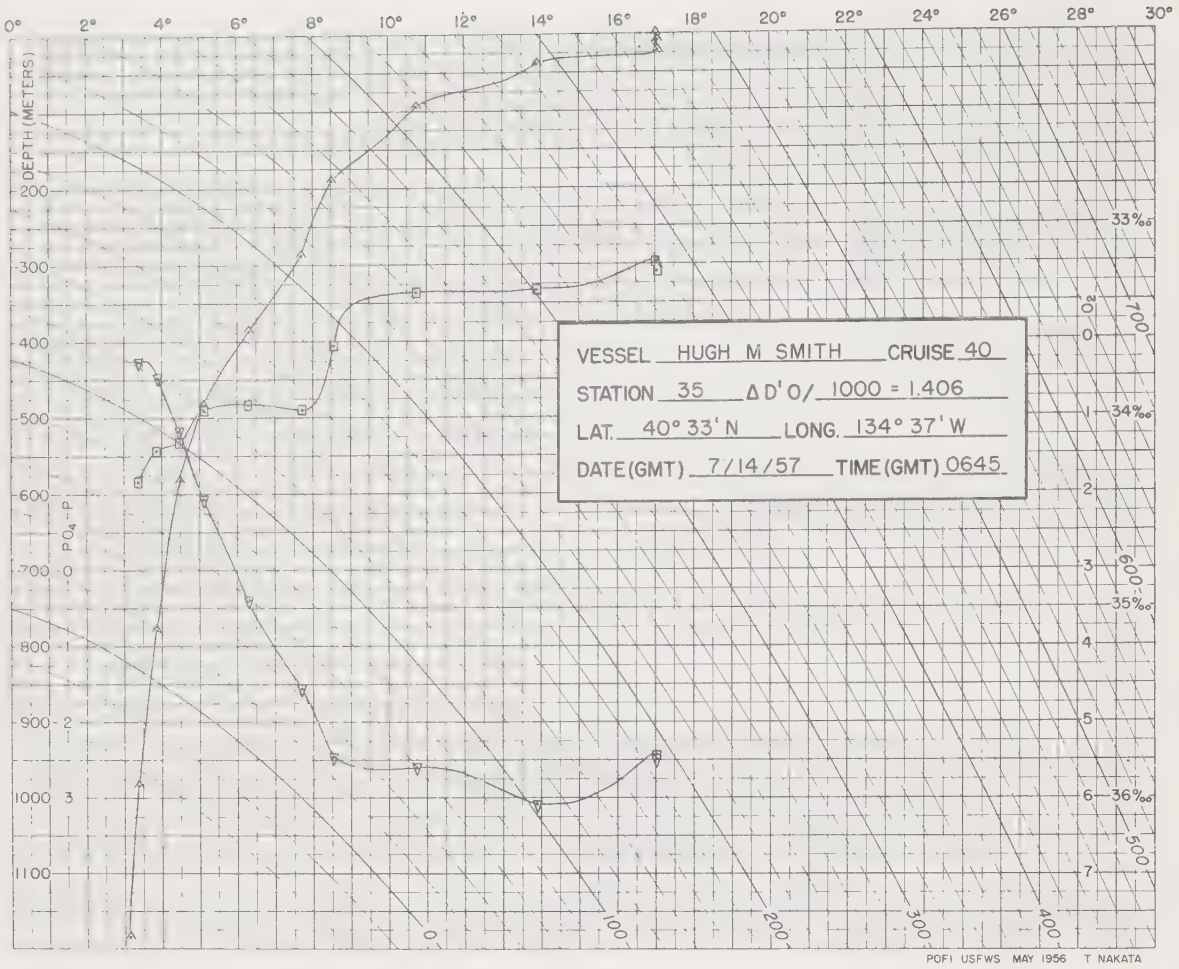
* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 33 ΔD' O/ 1000 = 1.382
LAT. 43° 02' N LONG. 136° 10' W
DATE (GMT) 7/13/57 TIME (GMT) 0557
DEPTH (METERS)
P-PO4-P
POF: USFWS MAY 1956 T. NAKATA

Weather: 03, cloud coverage 8. Wind: 310°, 06 kt. Sea: 3-5 ft. Wire angle: 03°.
BT slide: 93. Dry bulb: 61.3°F. Wet bulb: 58.9°F. Barometric pressure: 1002 mb.

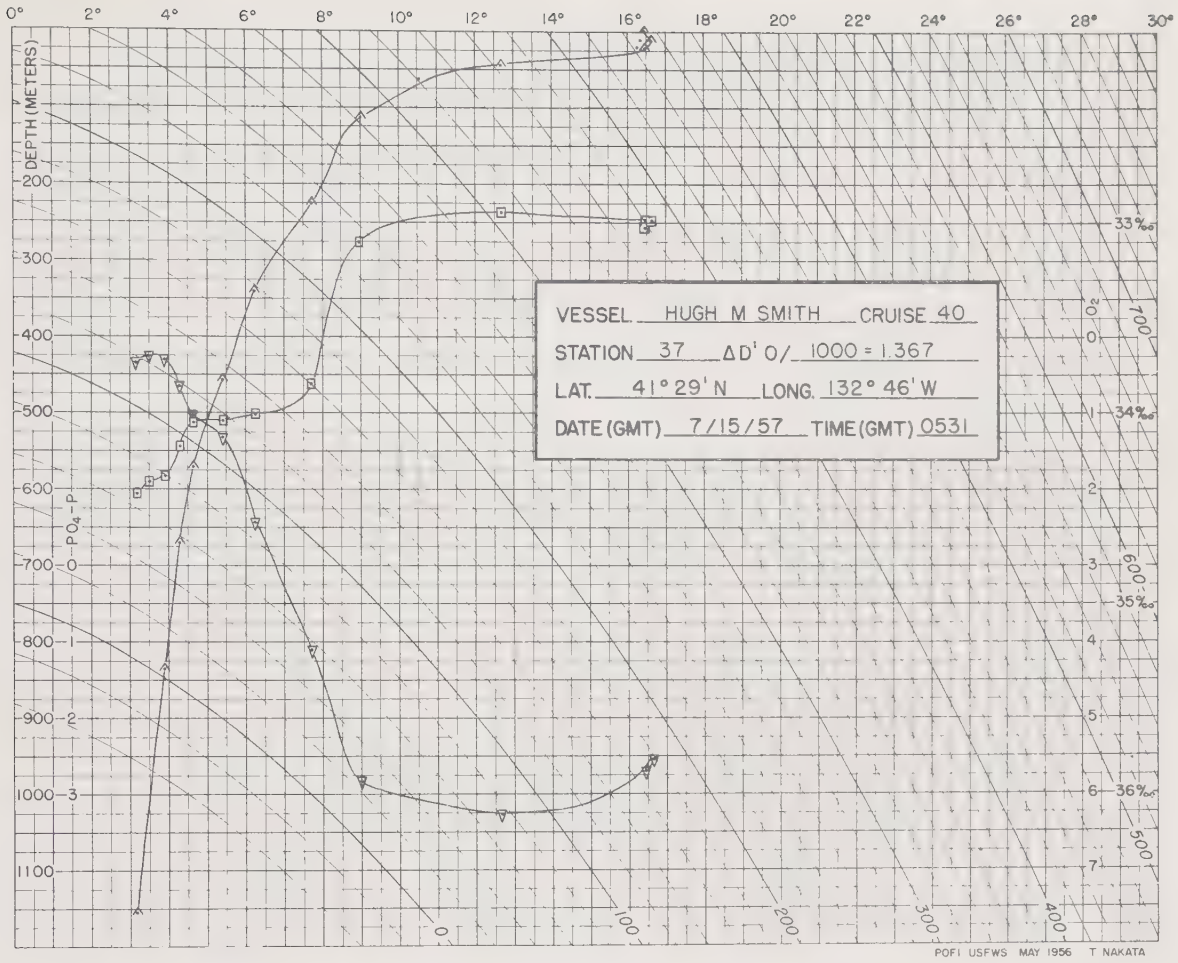
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	15.07	32.84	361.9	5.80	NS
21	14.91	32.82	360.0	5.78	0.52
42	11.74	32.88	295.2	6.46	0.62
106	8.64	32.89	244.9	6.22	1.10
159	7.34	33.30	196.3	5.82	1.33
327	6.10	33.91	135.1	3.68	2.22
443	4.95	33.91	121.9	2.18	2.60
551	4.41	34.02	108.0	1.31	1.40
664	4.03	34.09	99.0	0.78	2.92
887	3.52	34.31	77.7	0.33	3.04
1102	3.08	34.36	69.9	0.30	3.71
1316	2.77	34.45	60.5	0.39	1.82*
1316					2.11*

* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 35 Δ D' O/ 1000 = 1.406
LAT. 40° 33' N LONG. 134° 37' W
DATE (GMT) 7/14/57 TIME (GMT) 0645
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

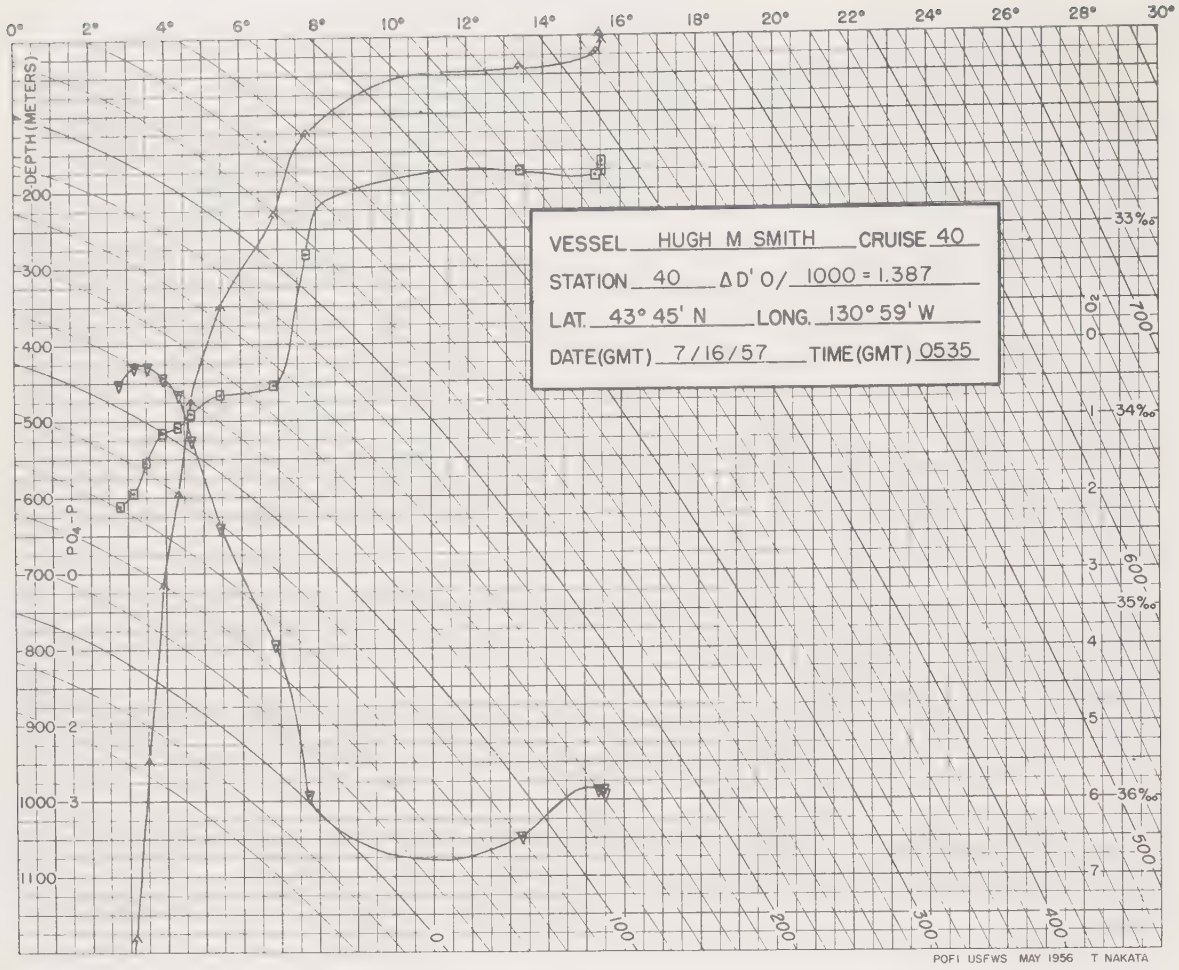
Weather: 02, cloud coverage 4. Wind: 290°, 17 kt. Sea: 5-8 ft. Wire angle: 29°.
BT slide: 104. Dry bulb: 61.8°F. Wet bulb: 59.2°F. Barometric pressure: 1016 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	17.02	33.24	374.4	5.49	0.50
8	17.02	33.19	378.2	5.48	0.51
21	17.04	33.24	375.0	5.44	0.48
39	13.89	33.33	302.2	6.06	0.48
95	10.74	33.35	243.3	5.60	0.75
190	8.55	33.62	189.3	5.45	1.19
287	7.70	33.96	152.0	4.54	1.57
387	6.32	33.93	136.4	3.40	1.89
484	5.11	33.96	120.0	2.08	1.79
582	4.47	34.13	100.4	1.18	2.56
779	3.85	34.18	90.5	0.48	3.16
983	3.38	34.34	74.1	0.27	3.21
1185	3.12	NG	-	NG	NG


VESSEL HUGH M SMITH CRUISE 40
STATION 37 ΔD' O/ 1000 = 1.367
LAT. 41° 29' N LONG. 132° 46' W
DATE (GMT) 7/15/57 TIME (GMT) 0531
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 7. Wind: 280°, 10 kt. Sea: 3-5 ft. Wire angle: 17°.
BT slide: 113. Dry bulb: 60.0°F. Wet bulb: 58.8°F. Barometric pressure: 1025 mb.

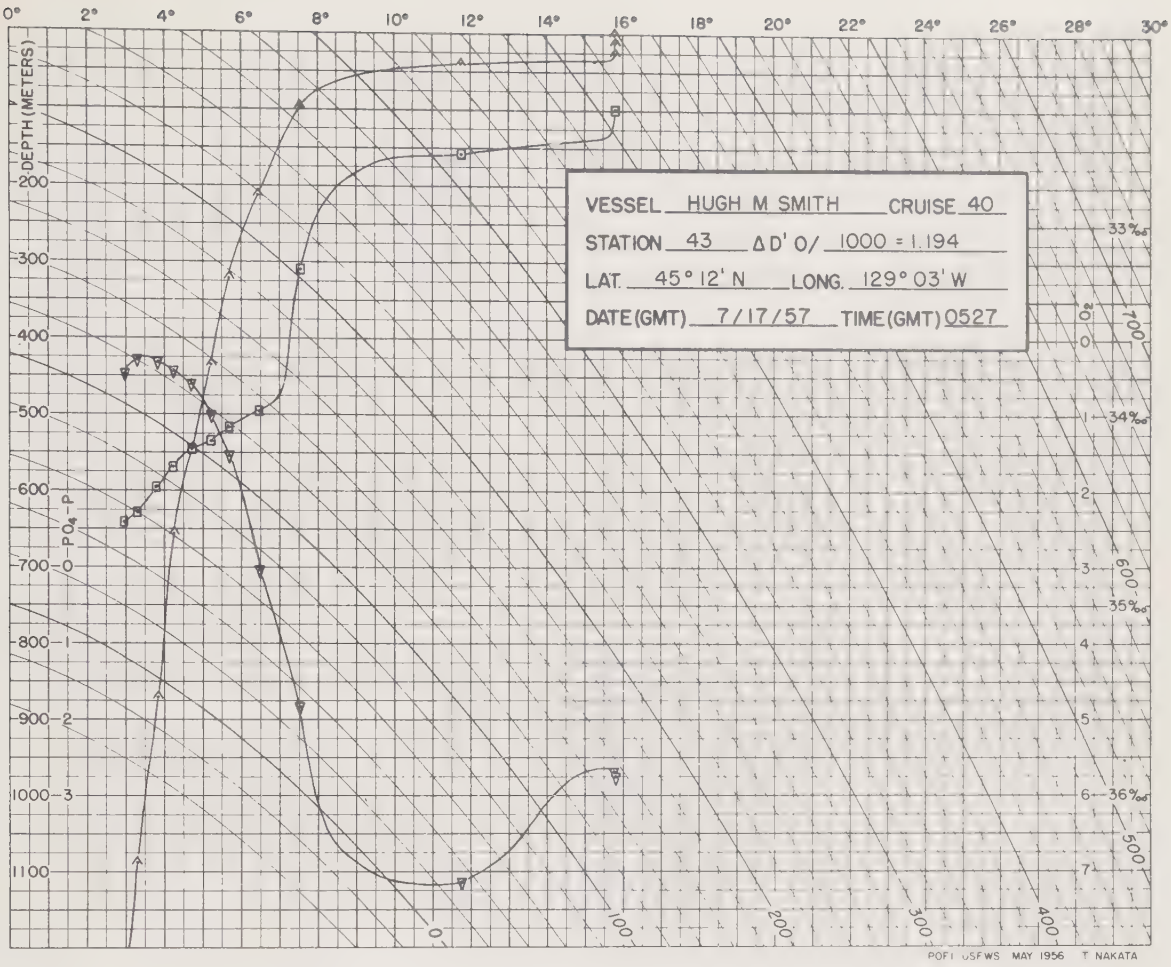
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	16.43	33.03	377.0	5.70	0.49
11	16.63	32.99	384.3	5.54	0.62
21	16.44	32.99	380.0	5.69	0.49
42	12.67	32.94	307.5	6.26	0.52
124	8.98	33.10	234.2	5.81	0.96
227	7.73	33.84	161.3	4.10	1.58
340	6.27	34.00	130.1	2.42	2.12
458	5.41	34.04	117.4	1.33	1.68
571	4.66	34.05	108.3	1.03	1.51
670	4.29	34.18	94.8	0.65	2.60
835	3.90	34.33	79.7	0.29	2.85
1000	3.50	34.36	73.7	0.27	2.94
1156	3.19	34.42	66.3	0.33	1.80


VESSEL HUGH M SMITH CRUISE 40
STATION 40 ΔD' O/ 1000 = 1.387
LAT. 43° 45' N LONG. 130° 59' W
DATE(GMT) 7/16/57 TIME(GMT) 0535
DEPTH (METERS)
PO4 - P
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 4. Wind: 350°, 16 kt. Sea: 3-5 ft. Wire angle: 00°.
BT slide: 125. Dry bulb: 59.4°F. Wet bulb: 58.2°F. Barometric pressure: 1028 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	15.49	32.66	383.9	5.88	0.57
11	15.50	32.70	381.0	5.91	0.51
21	15.39	32.72	377.2	5.88	0.40
42	13.35	32.70	338.0	6.47	0.58
127	7.74	33.13	214.3	5.94	1.02
233	6.88	33.82	151.7	3.94	1.63
353	5.44	33.87	130.2	2.41	2.46
479	4.68	33.96	115.5	1.25	1.43
599	4.36	34.04	105.9	0.66	1.47
719	3.93	34.07	99.5	0.43	3.00
951	3.53	34.22	84.6	0.29	3.33
1185	3.16	34.38	69.1	0.31	3.19
1403	2.80	34.45	60.8	0.52	1.40*
1403					1.45*

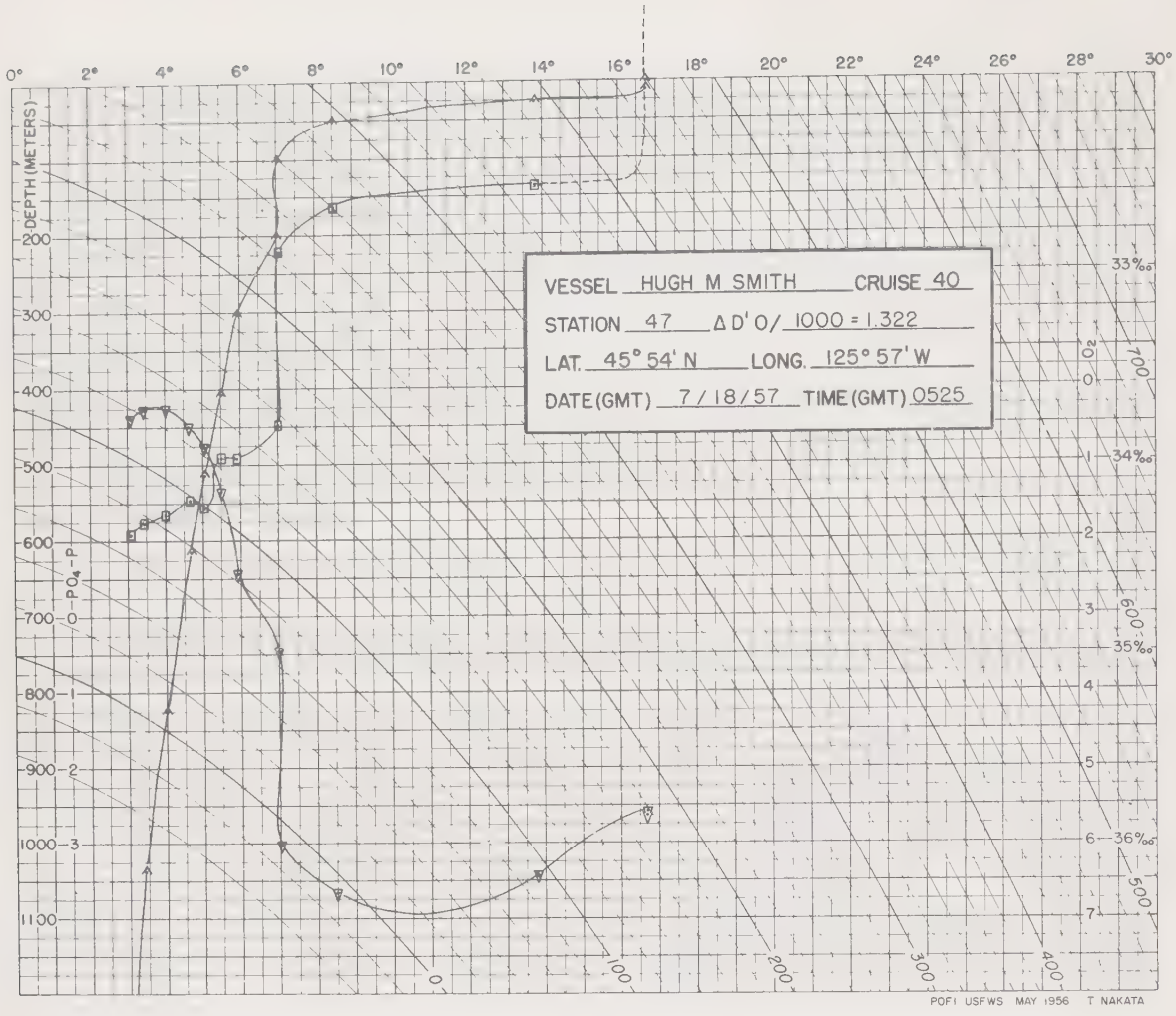
* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 43 ΔD' O/ 1000 = 1.194
LAT. 45° 12' N LONG. 129° 03' W
DATE(GMT) 7/17/57 TIME(GMT) 0527
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T. NAKATA

Weather: 02, cloud coverage 6. Wind: 340°, 24 kt. Sea: 3-5 ft. Wire angle: 30°.
BT slide: 134. Dry bulb: 58.8°F. Wet bulb: 57.6°F. Barometric pressure: 1029 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	15.78	NG	-	5.76	0.45
10	15.79	32.39	409.9	5.75	0.45
24	15.78	32.39	409.8	5.70	0.43
38	11.76	32.63	313.9	7.14	0.86
96	7.54	33.24	203.3	4.83	1.48
212	6.46	33.98	134.1	3.04	1.23
320	5.68	34.07	118.1	1.54	1.71
435	5.21	34.14	107.6	1.01	2.26
546	4.71	34.18	99.2	0.59	1.51
655	4.24	34.27	87.5	0.43	2.57
871	3.82	34.38	75.2	0.31	2.85
1086	3.30	34.51	60.7	0.28	2.94
1291	2.95	34.56	53.7	0.46	1.47*
1291					1.50*

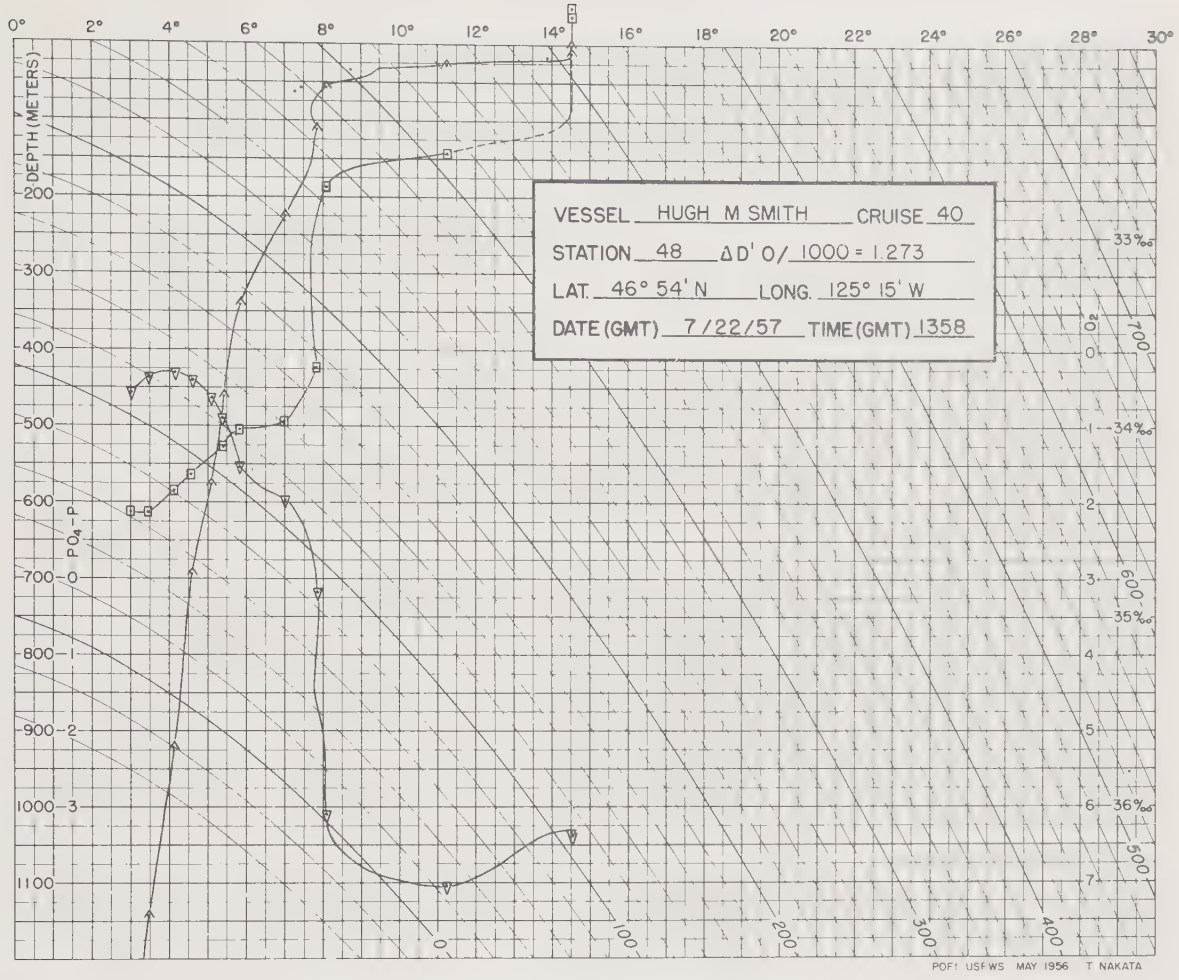
* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 47 Δ D' O/ 1000 = 1.322
LAT. 45° 54' N LONG. 125° 57' W
DATE (GMT) 7/18/57 TIME (GMT) 0525
DEPTH (METERS)
PO4-P
POF1 USFWS MAY 1956 T NAKATA

Weather: 01, cloud coverage 4. Wind: 340°, 19 kt. Sea: 5-8 ft. Wire angle: 29°. BT slide: 145. Dry bulb: 60.7°F. Wet bulb: 58.3°F. Barometric pressure: 1021 mb.

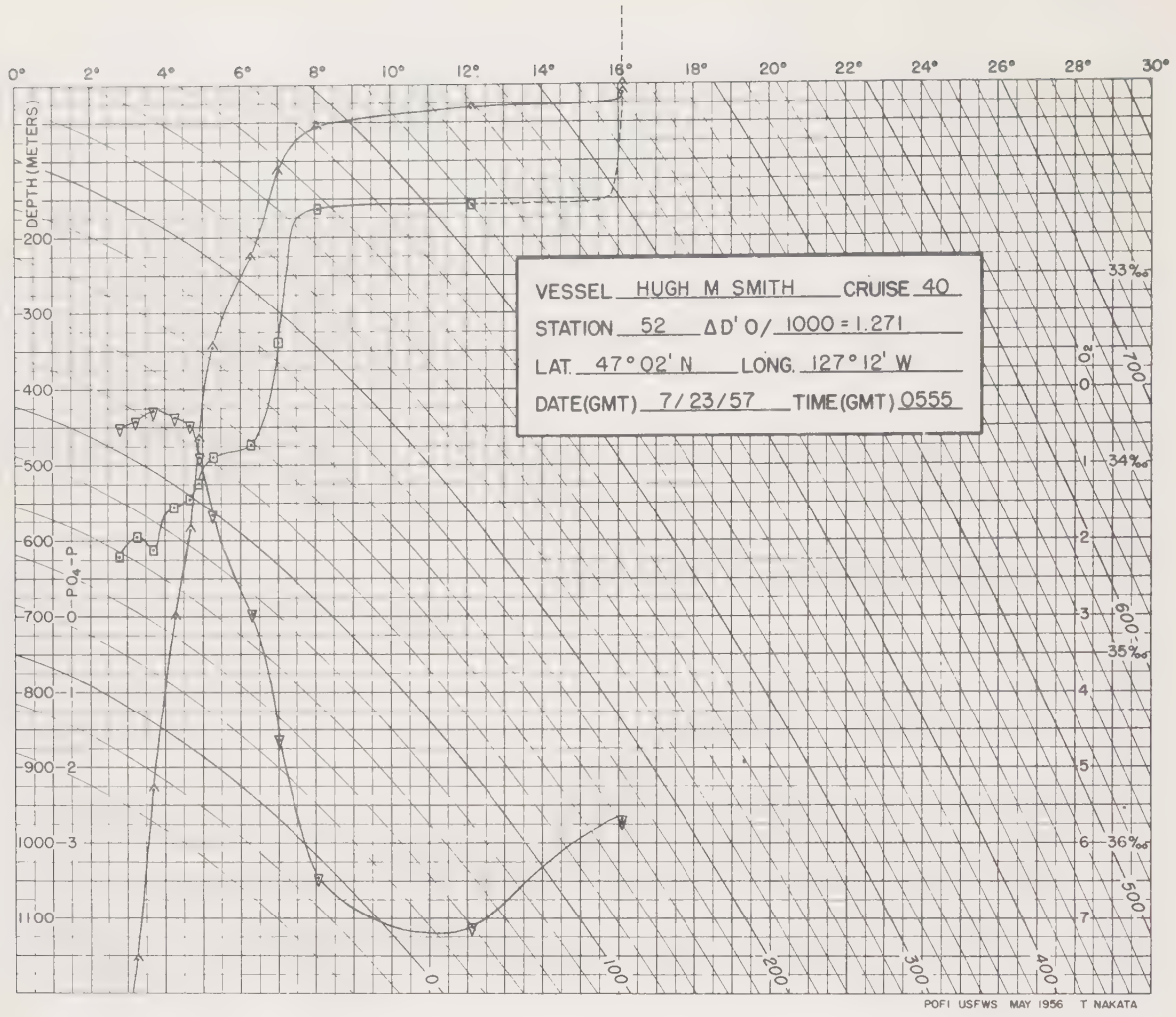
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	16.72	NG	-	5.62	0.47
10	16.72	NG	-	5.58	0.48
23	13.80	32.54	358.4	6.42	0.56
50	8.52	32.65	261.0	6.65	0.98
100	7.04	32.88	223.9	6.01	1.29
200	7.00	33.78	156.1	3.44	1.99
302	5.94	33.96	129.4	2.42	1.93
408	5.51	33.96	124.7	1.34	1.70
513	5.06	34.22 Q	99.8	0.77	1.84
617	4.66	34.18	98.6	0.49	3.08
825	4.02	34.27	85.3	0.25	2.79
1038	3.44	34.31	77.0	0.27	2.54
1242	3.10	34.36	70.1	0.36	2.37*
1242					2.23*

* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 48 ΔD' O/ 1000 = 1.273
LAT. 46° 54' N LONG. 125° 15' W
DATE (GMT) 7/22/57 TIME (GMT) 1358
DEPTH (METERS)
PO4-P
POF: USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 8. Wind: 320°, 07 kt. Sea: 1-3 ft. Wire angle: 16°.
BT slide: 149. Dry bulb: 58.5°F. Wet bulb: 57.8°F. Barometric pressure: 1017 mb.

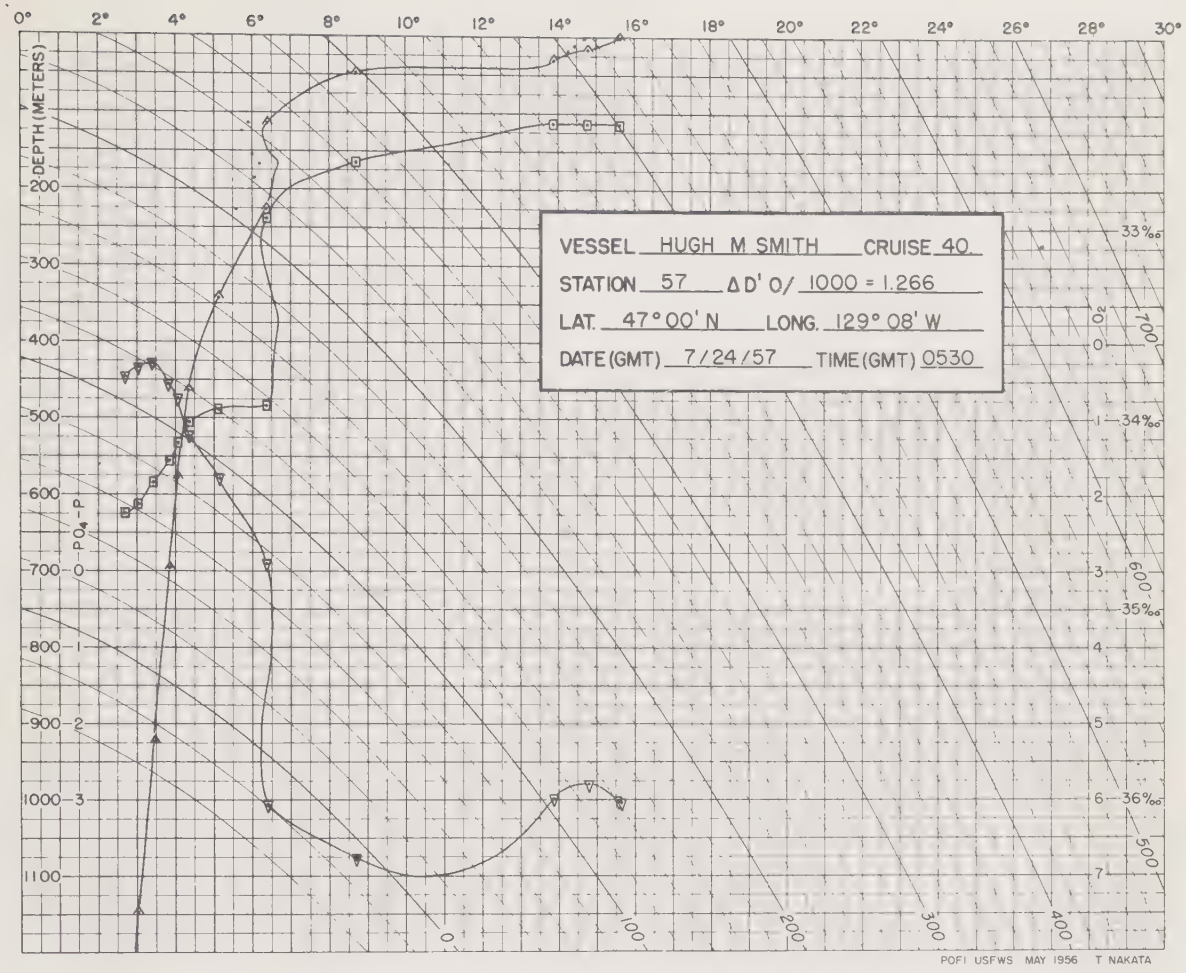
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, μg at./L.
0	14.54	31.80	427.5	6.38	0.52
10	14.54	31.85	423.8	6.35	0.55
25	11.25	32.57	309.6	7.04	0.62
56	8.08	32.74	248.0	6.08	1.04
112	7.84	33.69	174.1	3.18	1.92
225	7.02	33.98	141.6	1.97	2.22
341	5.84	34.02	123.7	1.53	2.33
461	5.41	34.11	112.1	0.87	2.62
577	5.10	NG	-	0.63	2.53
694	4.60	34.25	92.8	0.41	2.85
920	4.15	34.34	81.2	0.31	2.83
1143	3.46	34.45	66.5	0.36	2.87
1353	3.02	34.45	62.6	0.56	2.11


VESSEL HUGH M SMITH CRUISE 40
STATION 52 ΔD' O/ 1000 = 1.271
LAT. 47° 02' N LONG. 127° 12' W
DATE(GMT) 7/23/57 TIME(GMT) 0555
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage not recorded. Wind: 260°, 15 kt. Sea: 1-3 ft. Wire angle: 15°. BT slide: 158. Dry bulb: 62.3°F. Wet bulb: 58.6°F. Barometric pressure: 1020 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	16.13	31.47	484.5	5.70	0.40
10	16.11	31.49	482.7	5.68	0.42
31	12.12	32.63	320.3	7.11	0.63
56	8.06	32.65	254.5	6.44	0.93
113	7.00	33.35	188.1	4.62	1.58
228	6.32	33.89	139.3	2.96	1.98
345	5.27	33.96	121.7	1.67	2.35
467	4.90	34.09	107.9	0.89	2.68
585	4.66	34.18	98.6	0.47	1.38
702	4.26	34.22	91.5	0.37	1.60
928	3.68	34.45 Q	68.5	0.28	2.85
1154	3.24	34.38	69.9	0.41	2.83
1362	2.78	34.49	57.6	0.50	1.66*
1362					1.31*

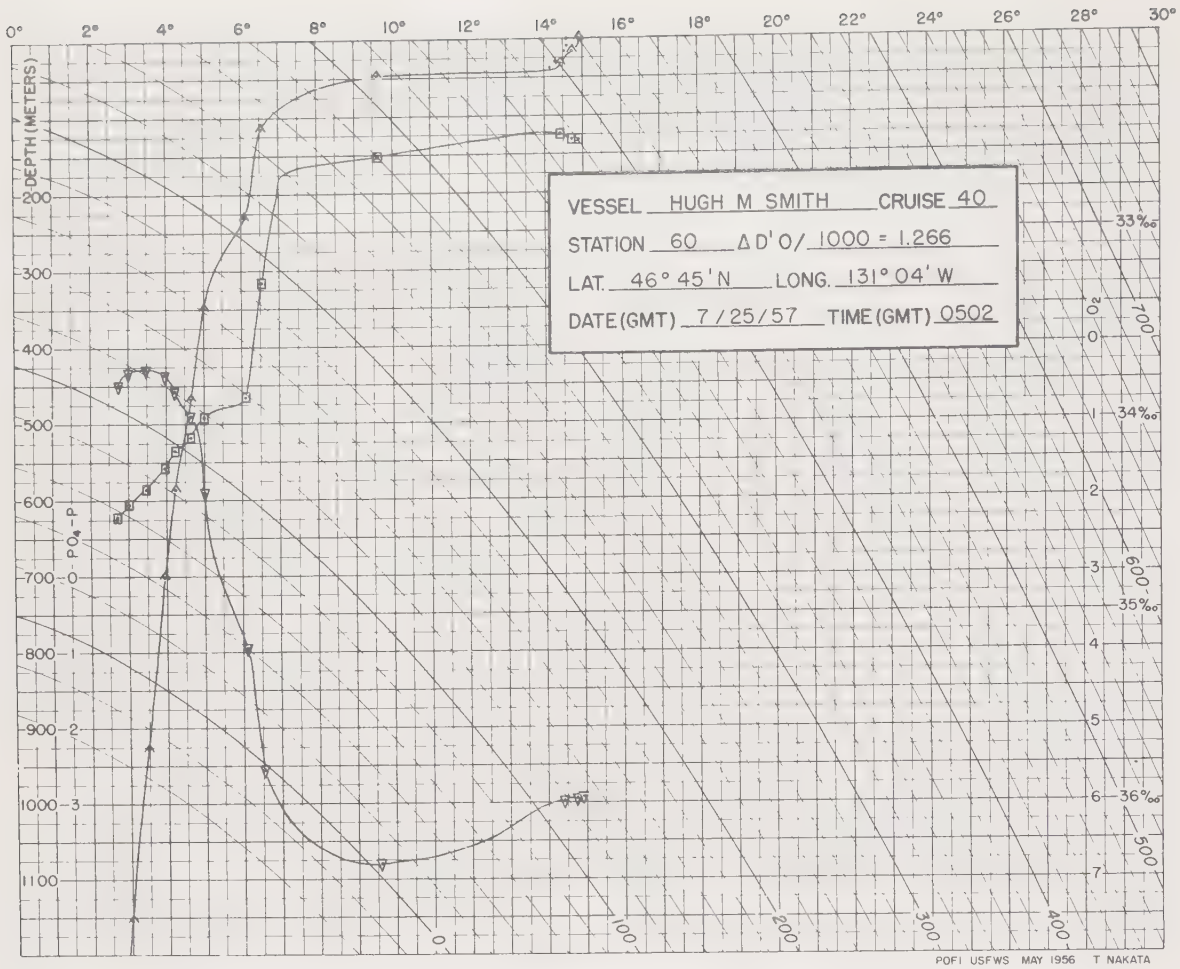
* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40.
STATION 57 ΔD' O/ 1000 = 1.266
LAT. 47° 00' N LONG. 129° 08' W
DATE (GMT) 7/24/57 TIME (GMT) 0530
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 7. Wind: 280°, 06 kt. Sea: < 1 ft. Wire angle: 13°.
BT slide: 167. Dry bulb: 59.8°F. Wet bulb: 58.1°F. Barometric pressure: 1026 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	15.64	32.45	402.3	6.03	0.44
15	14.80	32.45	385.0	5.79	0.51
30	13.88	32.45	366.8	5.98	0.56
46	8.71	32.66	263.0	6.76	0.86
112	6.42	32.95	210.7	6.06	1.30
226	6.40	33.93	137.2	2.90	1.97
342	5.14	33.95	121.1	1.79	2.11
463	4.37	34.02	107.5	1.21	2.57
578	4.06	34.13	96.2	0.72	1.30
696	3.83	34.22	87.2	0.53	2.22
922	3.41	34.33	75.2	0.29	2.77
1147	3.04	34.45	62.8	0.33	2.85
1360	2.71	34.49	57.1	0.45	1.93*
1360					1.79*

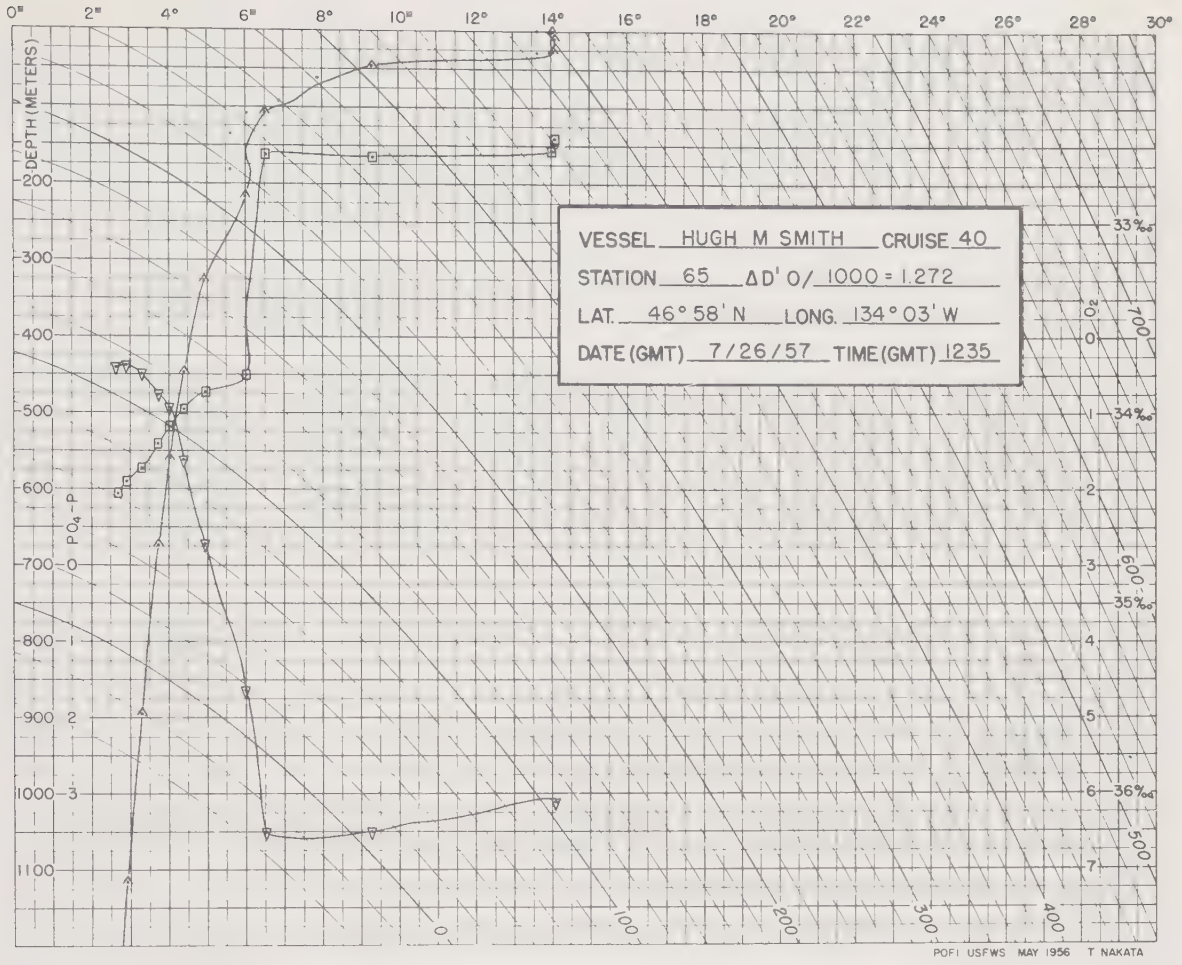
* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 60 ΔD'O/1000 = 1.266
LAT. 46° 45'N LONG. 131° 04' W
DATE (GMT) 7/25/57 TIME (GMT) 0502
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 8. Wind: 220°, 14 kt. Sea: 1-3 ft. Wire angle: 08°.
BT slide: 178. Dry bulb: 61.8°F. Wet bulb: 60.2°F. Barometric pressure: 1020 mb.

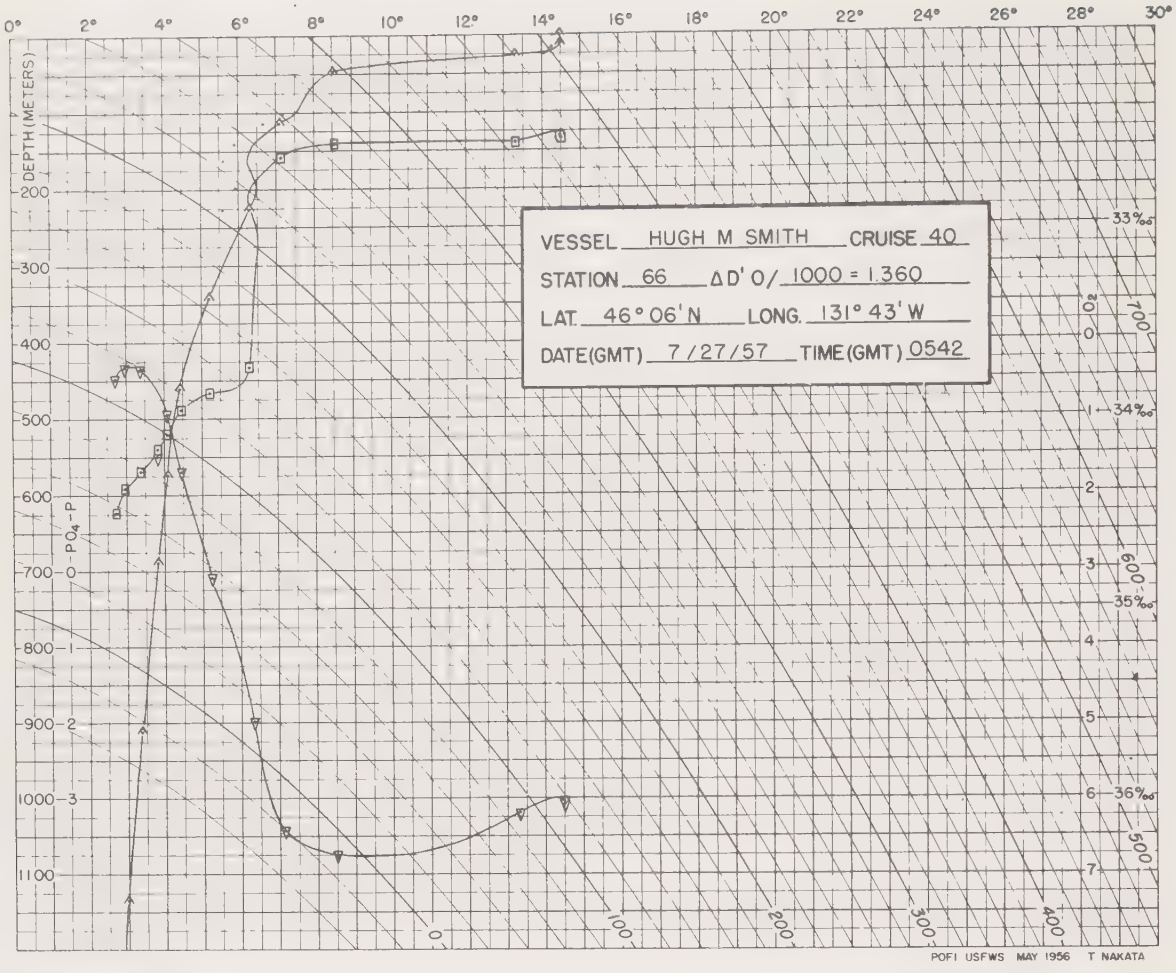
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	14.92	32.52	382.2	5.93	0.47
16	14.77	32.52	379.1	5.95	0.58
31	14.42	32.49	374.3	5.98	0.54
47	9.62	32.61	280.3	6.80	0.83
115	6.56	33.26	189.1	5.54	1.38
230	6.11	33.87	138.2	3.95	1.79
348	5.00	33.96	118.8	1.89	2.11
469	4.66	34.07	106.9	0.90	2.61
585	4.25	34.14	97.4	0.59	1.17
700	3.97	34.23	87.8	0.36	2.81
928	3.46	34.34	74.9	0.31	2.82
1155	3.00	34.42	64.6	0.33	2.81
1369	2.72	34.49	57.1	0.51	1.38*
1369					1.49*

* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 65 ΔD' O/ 1000 = 1.272
LAT. 46° 58' N LONG. 134° 03' W
DATE (GMT) 7/26/57 TIME (GMT) 1235
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 63, cloud coverage 8. Wind: 250°, 20 kt. Sea: 3-5 ft. Wire angle: 19°.
BT slide: 189. Dry bulb: 55.0°F. Wet bulb: 54.2°F. Barometric pressure: 1022 mb.

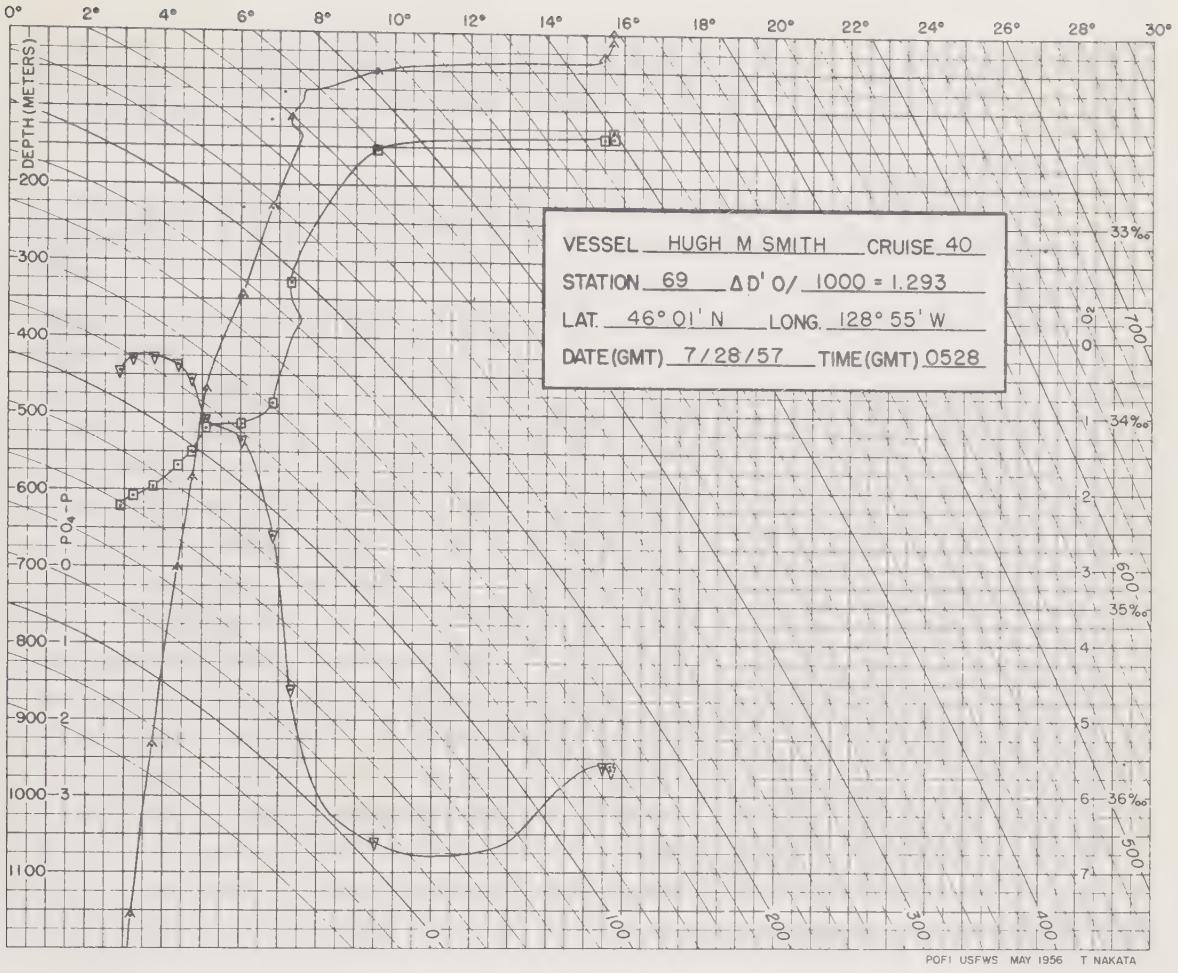
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	14.08	32.57	361.8	6.07	0.51
10	14.10	32.56	362.9	6.11	0.52
25	14.06	32.63	357.0	6.07	0.55
44	9.32	32.66	272.1	6.50 Q	0.71
108	6.57	32.65 Q	235.0	6.50	1.10
217	6.01	33.80	142.1	4.65	0.75
328	4.96	33.89	123.5	2.72	1.97
447	4.41	33.98	111.2	1.63	2.46
560	4.03	34.07	100.5	0.94	0.85
673	3.76	34.16	91.0	0.77	1.23
894	3.33	34.29	77.6	0.50	2.76
1114	2.92	34.36	68.6	0.38	1.51
1323	2.66	34.42	61.8	0.41	NS


VESSEL HUGH M SMITH CRUISE 40
STATION 66 ΔD' O/ 1000 = 1.360
LAT. 46° 06' N LONG. 131° 43' W
DATE(GMT) 7/27/57 TIME(GMT) 0542
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 53, cloud coverage not recorded. Wind: 250°, 20 kt. Sea: 5-8 ft. Wire angle: 21°, 18°. BT slide: 197. Dry bulb: 60.2°F. Wet bulb: 60.2°F. Barometric pressure: 1017 mb.

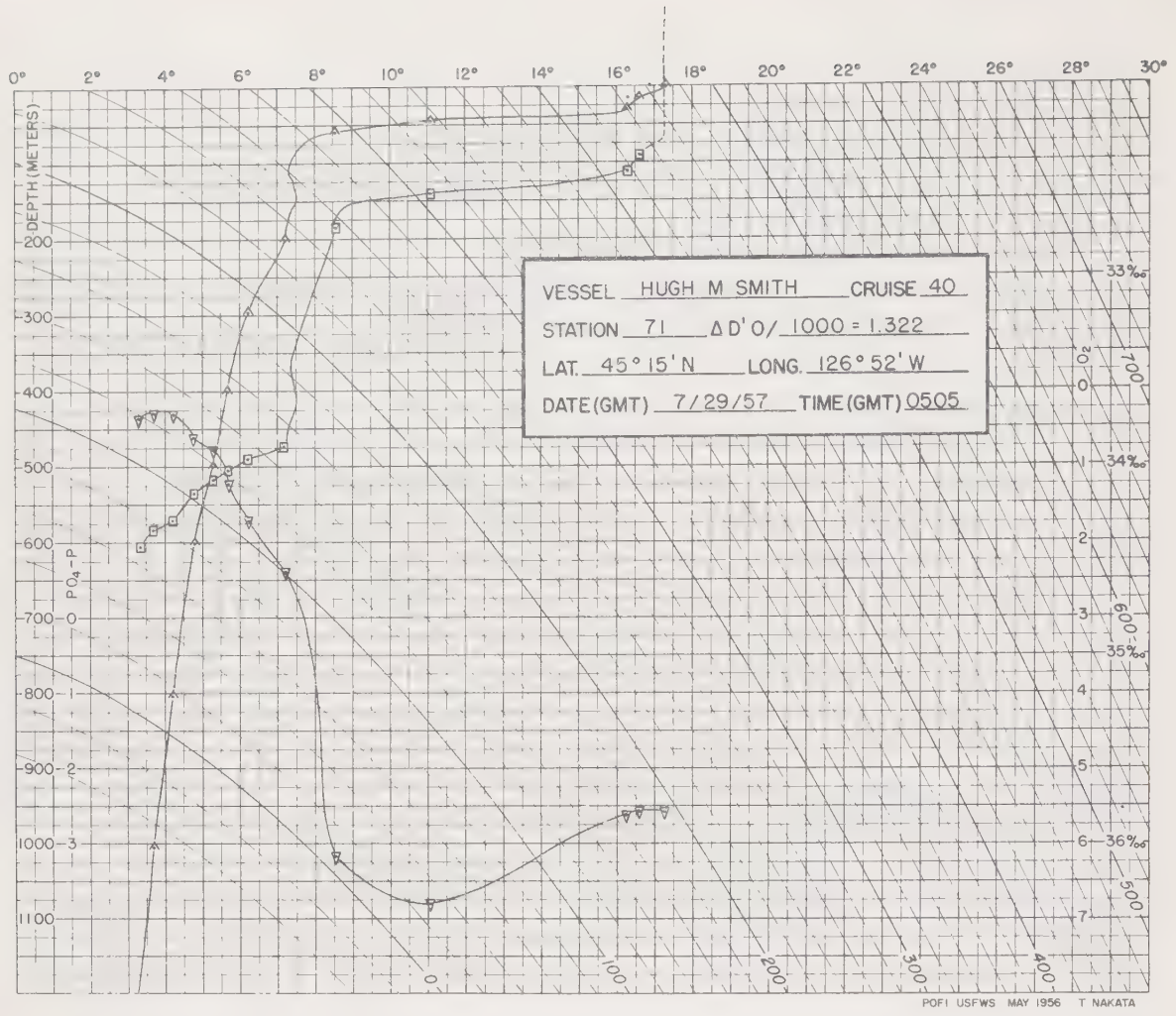
	Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
I	0	14.49	32.53	373.0	6.08	0.57
II	10	14.49	32.52	373.5	6.04	0.58
	26	13.32	32.55	348.4	6.20	0.49
	46	8.56	32.56	268.2	6.73	1.09
	113	7.12	32.63	243.4	6.42	1.27
	226	6.34	33.73	151.5	4.99	1.59
	341	5.22	33.86	128.8	3.09	1.89
	460	4.46	33.95	114.0	1.70	2.45
	574	4.08	34.08	100.1	0.94 P	1.25
	689	3.82	34.16	91.7	1.49	2.73
	911	3.38	34.27	79.3	0.36	1.21
	1134	2.98	34.36	68.8	0.32	2.82
	1348	2.74	34.49	57.3	0.46	1.38*
	1348					1.55*

* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 69 Δ D' O/ 1000 = 1.293
LAT. 46° 01' N LONG. 128° 55' W
DATE (GMT) 7/28/57 TIME (GMT) 0528
DEPTH (METERS)
PO4 - P
POFI USFWS MAY 1956 T NAKATA

Weather: 40, cloud coverage 8. Wind: 220°, 18 kt. Sea: 3-5 ft. Wire angle: 06°, 11°. BT slide: 204. Dry bulb: 62.0°F. Wet bulb: 62.0°F. Barometric pressure: 1019 mb.

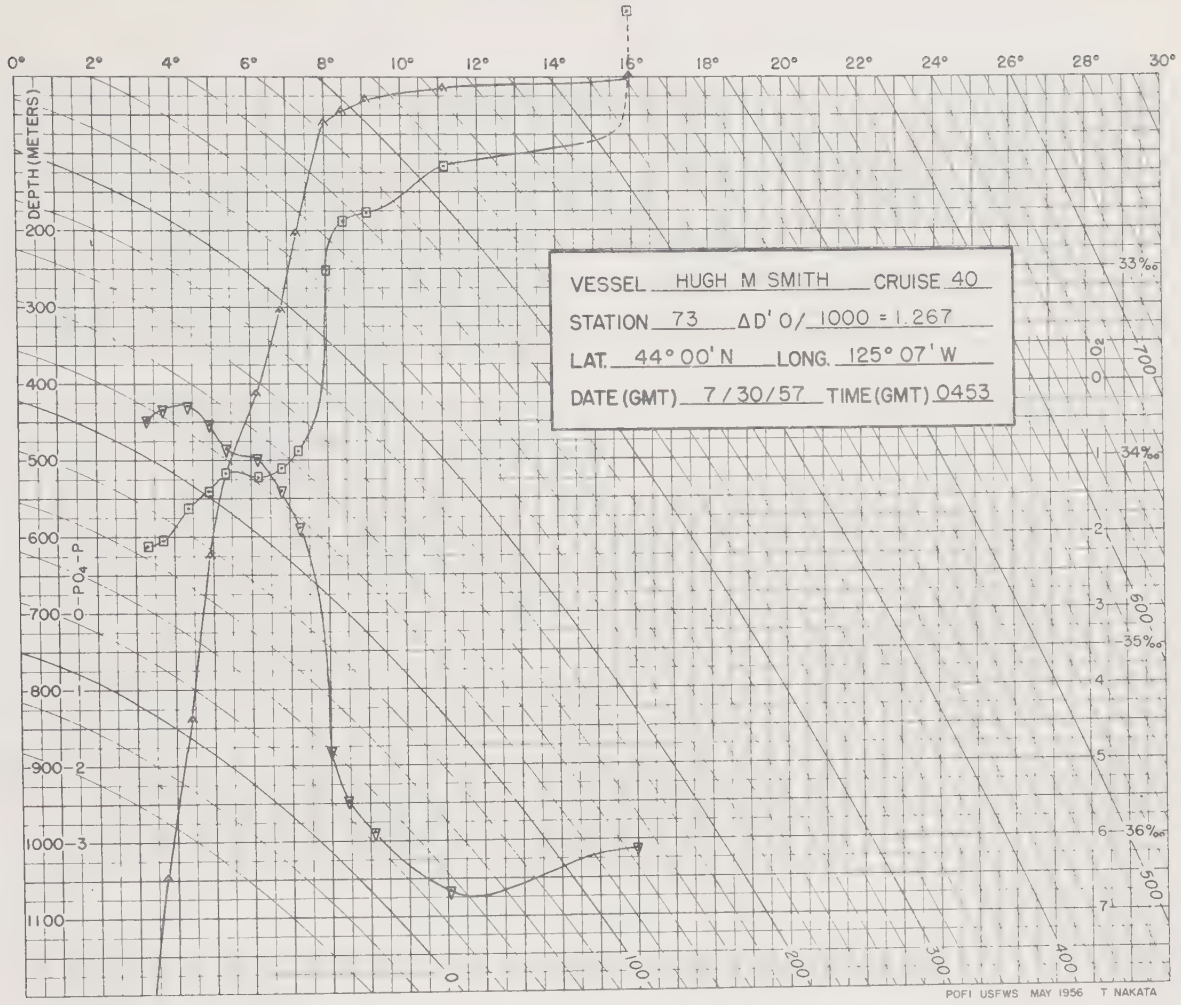
	Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, μg at./L.
	0	15.71	32.52	398.9	5.62	0.68
	10	15.72	32.54	397.5	5.61	0.53
	31	15.48	32.54	392.3	5.61	0.40
I	52	9.54	32.61	279.1	6.60	0.95
II	114	7.32	33.34	193.1	4.62	1.93
	230	6.84	33.95	141.4	2.59	2.14
	347	6.04	34.05	123.8	1.35	2.40
	470	5.10	34.07	111.5	1.07	2.87
	587	4.77	34.20	98.2	0.54	1.54
	704	4.40	34.27	89.2	0.35	3.30
	933	3.76	34.38	74.6	0.26	3.14
	1159	3.22	34.43	66.0	0.29	2.36
	1373	2.88	34.49	58.4	0.44	2.16


VESSEL HUGH M SMITH CRUISE 40
STATION 71 Δ D' O/ 1000 = 1.322
LAT. 45° 15' N LONG. 126° 52' W
DATE (GMT) 7/29/57 TIME (GMT) 0505
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 20, cloud coverage 8. Wind: 330°, 10 kt. Sea: 1-3 ft. Wire angle: 25°.
BT slide: 212. Dry bulb: 62.0°F. Wet bulb: 62.0°F. Barometric pressure: 1017 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	17.27	31.36	517.6	5.57	0.57
15	16.60	32.36	429.7	5.57	0.54
30	16.26	32.44	416.2	5.62	0.57
44	11.06	32.56	307.2	6.80	0.74
58	8.57	32.74	255.0	6.17	1.02
200	7.22	33.89	150.9	2.38	2.36
296	6.26	33.96	133.3	1.71	2.58
400	5.70	34.02	122.0	1.23	2.97
499	5.31	34.07	114.0	0.79	1.41
601	4.78	34.14	102.8	0.61	2.76
805	4.22	34.29	85.8	0.29	3.42
1005	3.72	34.34	77.3	0.29	1.57
1210	3.26	34.43	66.3	0.36	1.94*
1210					1.80*

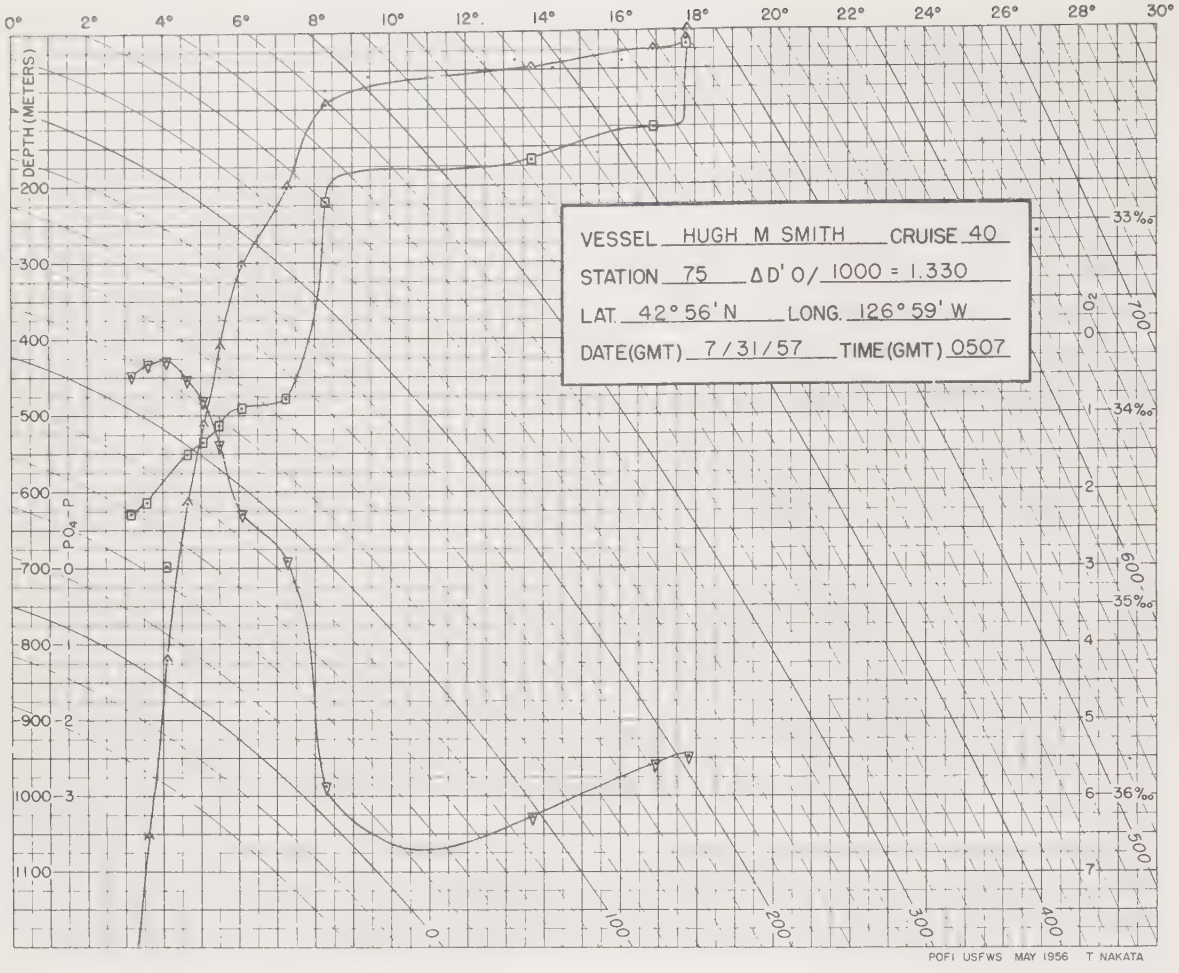
* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 73 ΔD' O/ 1000 = 1.267
LAT. 44° 00' N LONG. 125° 07' W
DATE (GMT) 7/30/57 TIME (GMT) 0453
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 7. Wind: 330°, 17 kt. Sea: 1-3 ft. Wire angle: 23°.
BT slide: 221. Dry bulb: 62.6°F. Wet bulb: 62.0°F. Barometric pressure: 1018 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, μg at./L.
0	15.98	31.66	467.5	6.13	0.64
15	11.10	32.46	315.2	6.66	0.95
30	9.08	32.70	265.3	5.89	1.18
45	8.46	32.75	252.8	5.46	1.56
60	8.00	33.01	226.9	4.81	1.69
205	7.26	33.95	146.9	1.88	1.99
306	6.80	34.04	134.0	1.40	2.06
414	6.18	34.09	122.5	0.98	2.37
517	5.35	34.07	114.4	0.85	1.95
626	4.92	34.16	102.9	0.53	2.39
840	4.38	34.25	90.4	0.29	3.18
1049	3.72	34.42	71.3	0.33	2.12
1261	3.32	34.45	65.4	0.46	2.22*
1261					2.34*

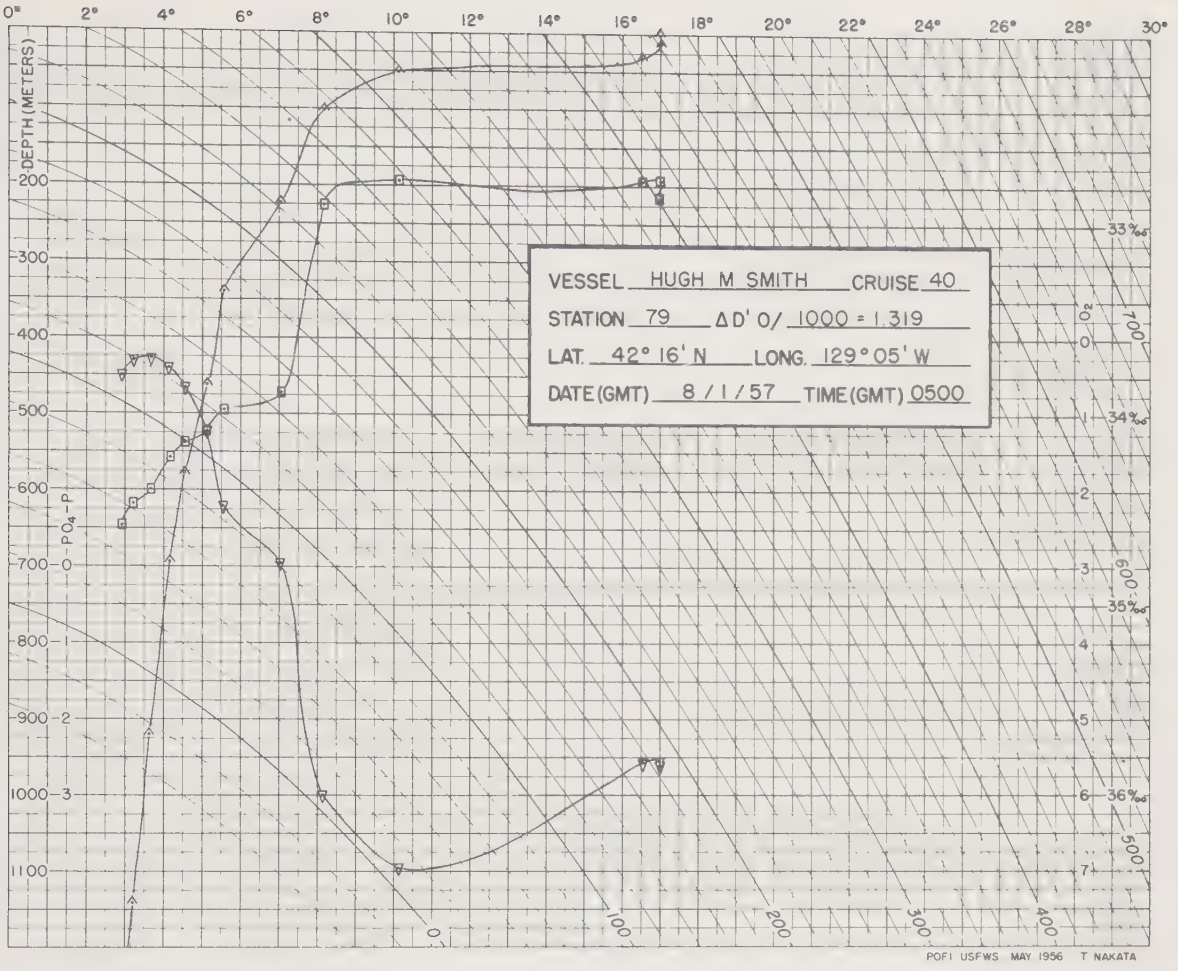
* Values of duplicate did not agree within 0.02 μg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 75 ΔD' O/ 1000 = 1.330
LAT. 42° 56' N LONG. 126° 59' W
DATE(GMT) 7/31/57 TIME(GMT) 0507
DEPTH (METERS)
PO4 - P
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 2. Wind: 330°, 14 kt. Sea: 1-3 ft. Wire angle: 27°, 29°. BT slide: 230, Dry bulb: 62.9°F. Wet bulb: 60.7°F. Barometric pressure: 1021 mb.

	Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, μg at./L.
	0	17.80	32.07	477.5	5.47	0.44
	10	17.78	32.07	477.0	5.46	0.43
	23	16.93	32.50	426.5	5.57	0.50
	46	13.73	32.66	348.2	6.28	0.53
	92	8.30	32.88	241.0	5.86	1.44
	201	7.30	33.91	150.3	2.89	2.42
	303	6.10	33.96	131.3	2.28	2.67
	409	5.53	34.05	118.0	1.39	3.04
	512	5.08	34.14	106.0	0.80	3.00
	614	4.66	34.20	97.2	0.53	3.40
I	819	4.10	34.79	47.0	0.27	3.58
II	1053	3.61	34.45	68.0	0.33	2.28
	1254	3.18	34.51	59.5	0.47	3.14*
	1254					2.72*

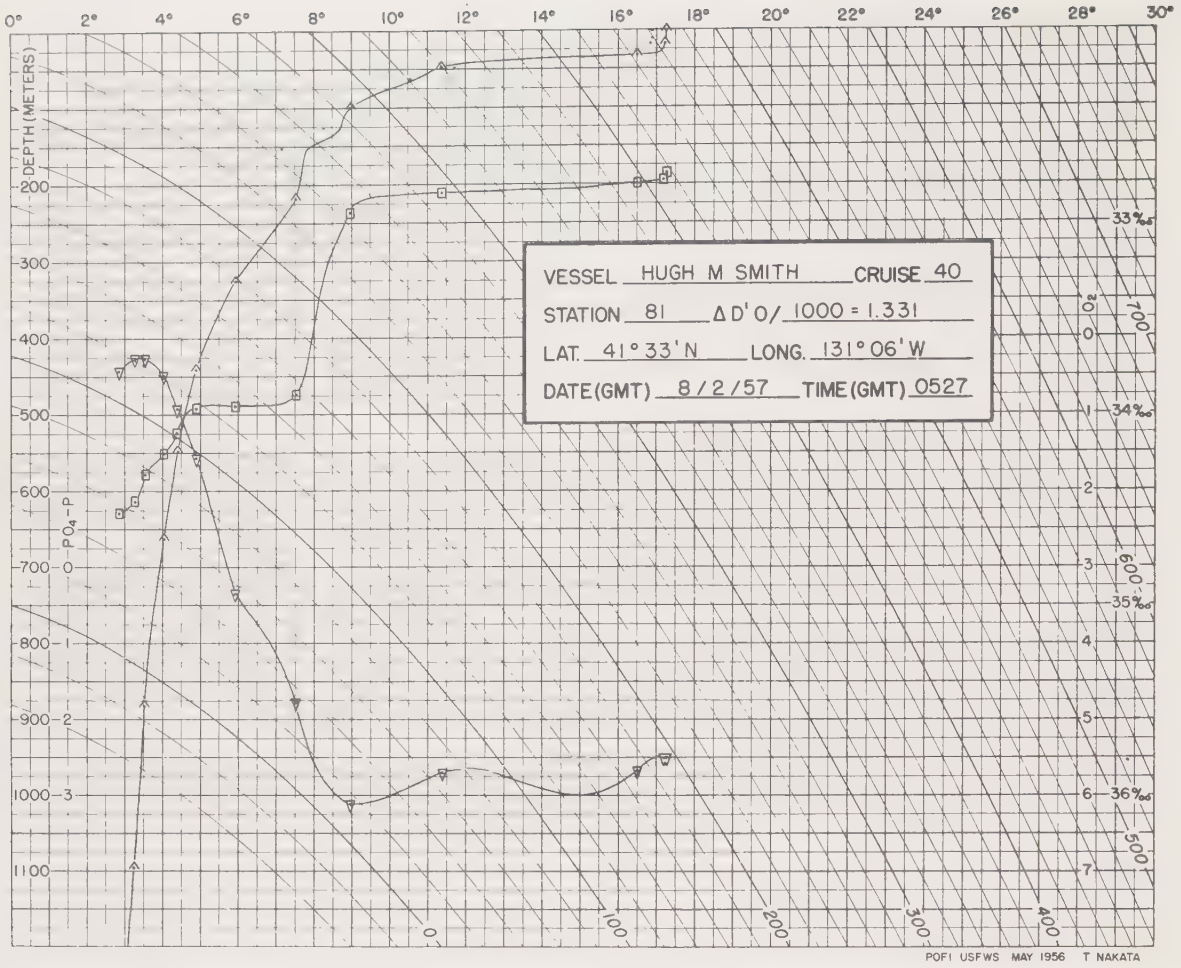
* Values of duplicate did not agree within 0.02 μg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 79 ΔD' O/ 1000 = 1.319
LAT. 42° 16' N LONG. 129° 05' W
DATE (GMT) 8 / 1 / 57 TIME (GMT) 0500
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 5. Wind: 000°, 17 kt. Sea: 1-3 ft. Wire angle: 10°, 15°. BT slide: 238. Dry bulb: 62.5°F. Wet bulb: 61.0°F. Barometric pressure: 1026 mb.

	Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, μg at./L.
	0	16.97	32.86	401.1	5.61	0.69
	10	17.00	32.77	408.3	5.56	0.62
I	31	16.54	32.77	398.3	5.58	0.49
II	51	10.12	32.77	276.3	6.96	0.87
	102	8.15	32.90	237.3	5.99	1.22
	225	7.04	33.89	148.6	2.95	2.21
	341	5.56	33.98	123.5	2.20	2.78
	462	5.14	34.09	110.5	1.23	3.08
	578	4.56	34.16	99.2	0.66	2.80
	693	4.16	34.23	89.7	0.40	2.81
	919	3.66	34.40	72.1	0.27	3.37
	1141	3.22	34.47	62.9	0.32	3.28
	1353	2.92	34.58	52.0	0.50	1.40*
	1353					1.65*

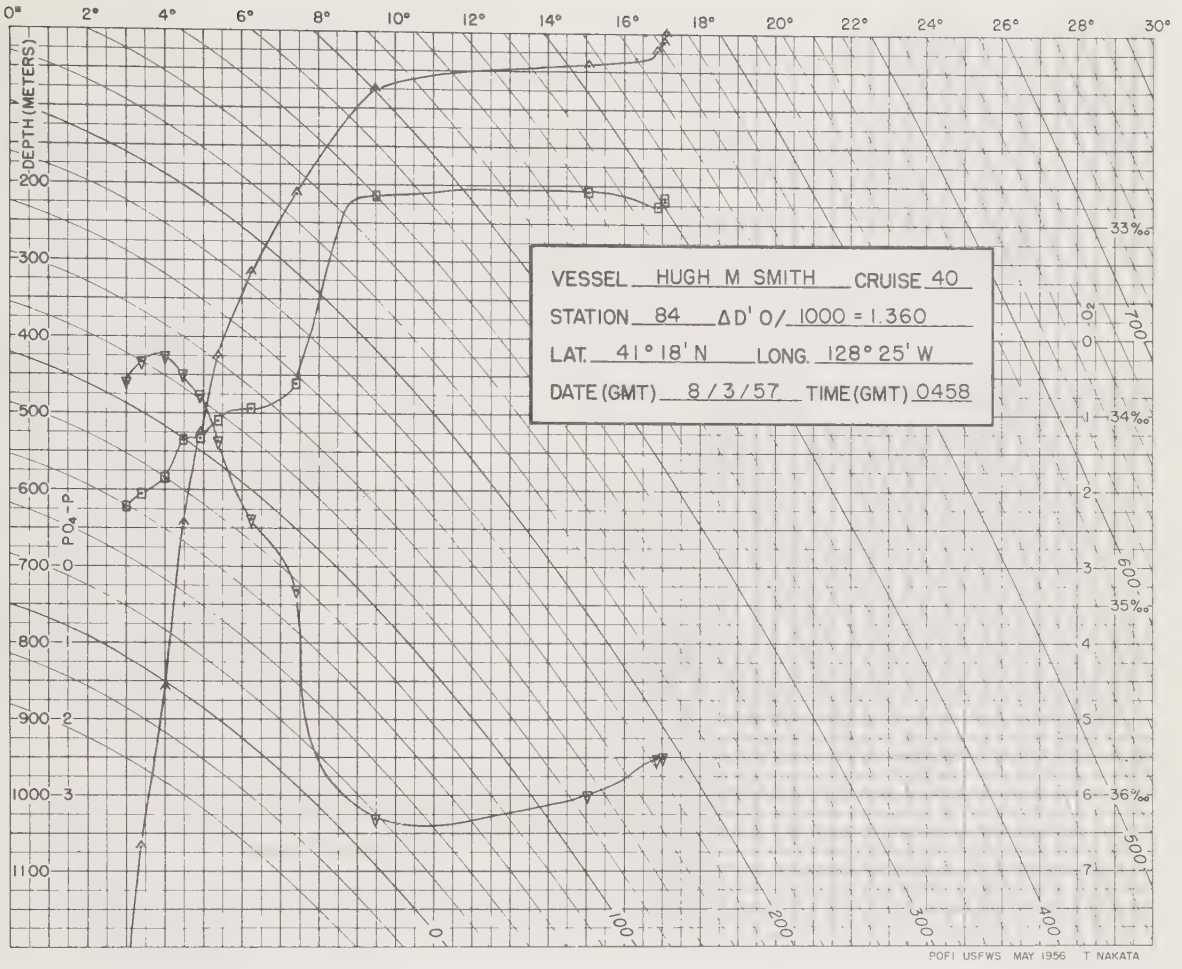
* Values of duplicate did not agree within 0.02 μg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 81 ΔD'O/1000 = 1.331
LAT. 41°33'N LONG. 131°06'W
DATE(GMT) 8/2/57 TIME(GMT) 0527
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 5. Wind: 330°, 10 kt. Sea: 1-3 ft. Wire angle: 00°.
BT slide: 247. Dry bulb: 62.8°F. Wet bulb: 60.2°F. Barometric pressure: 1028 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	17.25	32.74	416.4	5.51	0.57
15	17.20	32.77	413.0	5.50	0.57
31	16.48	32.79	395.7	5.68	1.76
47	11.36	32.84	291.5	5.69	0.71
100	8.95	32.94	245.7	6.11	1.07
217	7.54	33.89	155.1	4.77	1.64
325	5.93	33.95	130.0	3.34	2.13
440	4.88	33.96	117.6	1.57	1.96
548	4.40	34.09	102.7	0.92	1.72
661	4.04	34.20	90.9	0.48	3.16
882	3.54	34.31	77.9	0.26	3.08
1095	3.24	34.45	64.6	0.26	1.82
1309	2.85	34.52	56.0	0.42	2.53*
1309					2.93*

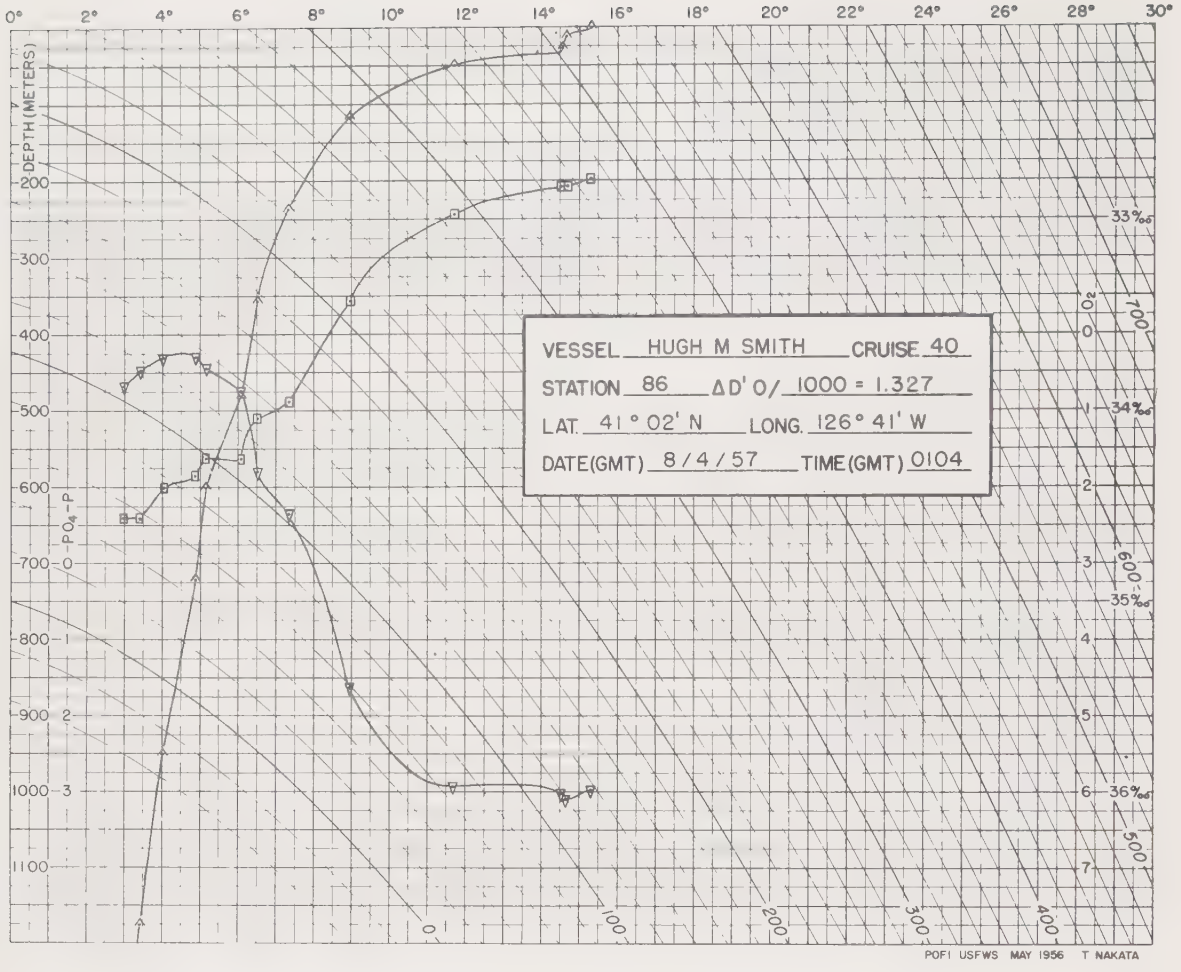
* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.



Weather: 02, cloud coverage 8. Wind: 280°, 12 kt. Sea: < 1 ft. Wire angle: 13°.
BT slide: 256. Dry bulb: 62.8°F. Wet bulb: 61.3°F. Barometric pressure: 1021 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	17.06	32.86	403.4	5.49	0.55
10	17.04	32.88	401.4	5.49	0.55
21	16.88	32.90	396.3	5.51	0.58
40	15.03	32.83	361.8	6.00	0.62
76	9.48	32.86	259.5	6.30	0.93
212	7.41	33.84	157.1	3.30	1.90
317	6.26	33.98	131.9	2.38	1.57
427	5.39	34.04	117.0	1.37	1.77
533	4.92	34.11	106.6	0.77	1.76
644	4.47	34.14	99.6	0.49	2.35
860	4.00	34.34	79.9	0.26	2.48
1068	3.40	34.42	68.3	0.34	2.01
1278	3.00	34.49	59.4	0.58	2.13*
1278					1.80*

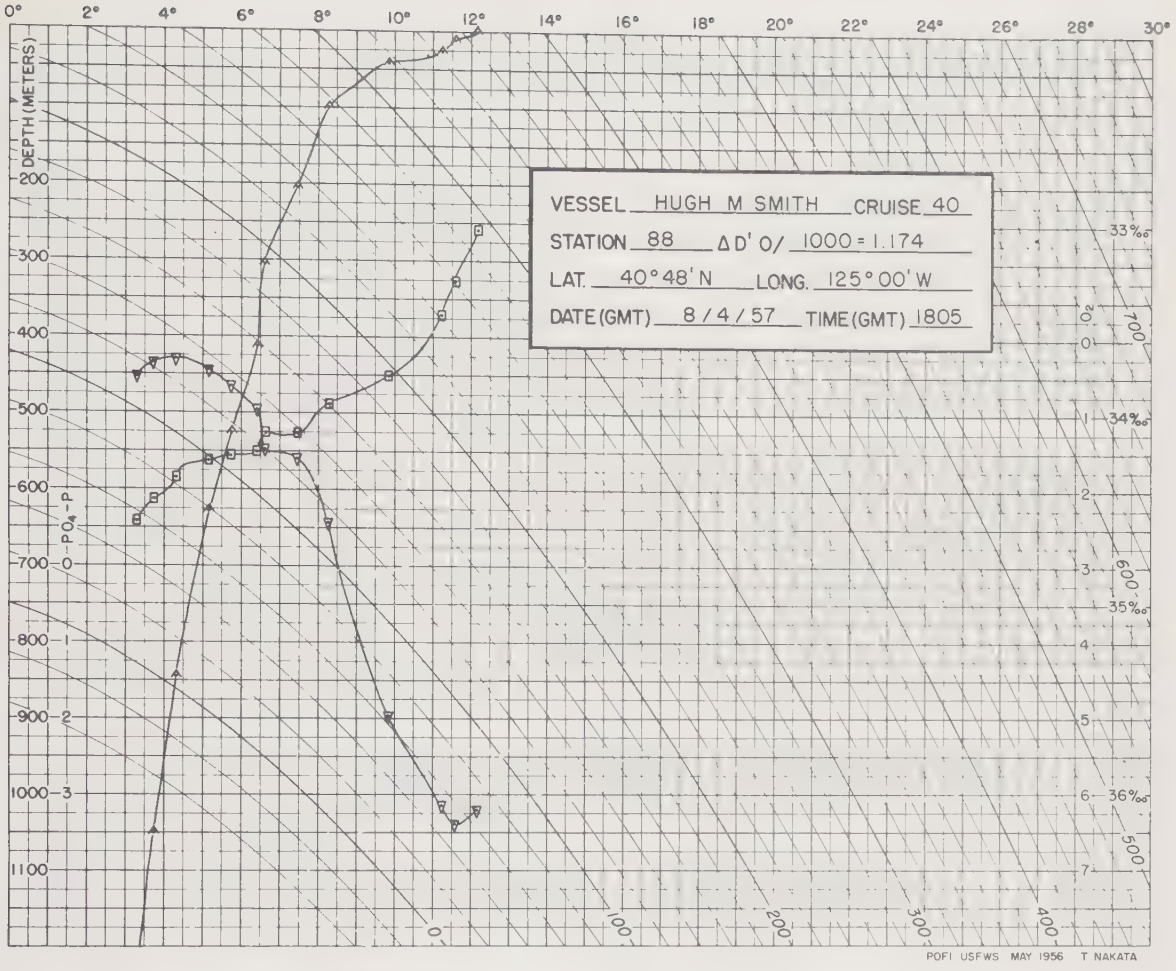
* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 86 ΔD' O/ 1000 = 1.327
LAT. 41° 02' N LONG. 126° 41' W
DATE(GMT) 8/4/57 TIME(GMT) 0104
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 6. Wind: 240°, 10 kt. Sea: 3-5 ft. Wire angle: 03°.
BT slide: 262. Dry bulb: 63.5°F. Wet bulb: 62.9°F. Barometric pressure: 1015 mb.

Depth, m.	T, °C.	S, °/oo	$\hat{O}$ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	15.28	32.79	370.0	5.98	0.60
11	14.66	32.83	354.2	6.08	0.60
27	14.55	32.83	352.0	6.02	0.64
48	11.71	32.97	288.1	5.93	0.99
117	8.95	33.42	210.0	4.63	1.75
236	7.36	33.95	148.0	2.34	2.52
356	6.54	34.04	130.8	1.79	2.64
481	6.08	34.25	109.3	0.74	3.20
601	5.18	34.25	98.8	0.43	1.68
721	4.89	34.34	88.9	0.29	3.05
952	4.04	34.40	75.8	0.30	3.50
1177	3.42	34.56	58.0	0.47	2.53
1386	2.99	34.56	53.9	0.66	2.38*
1386					1.83*

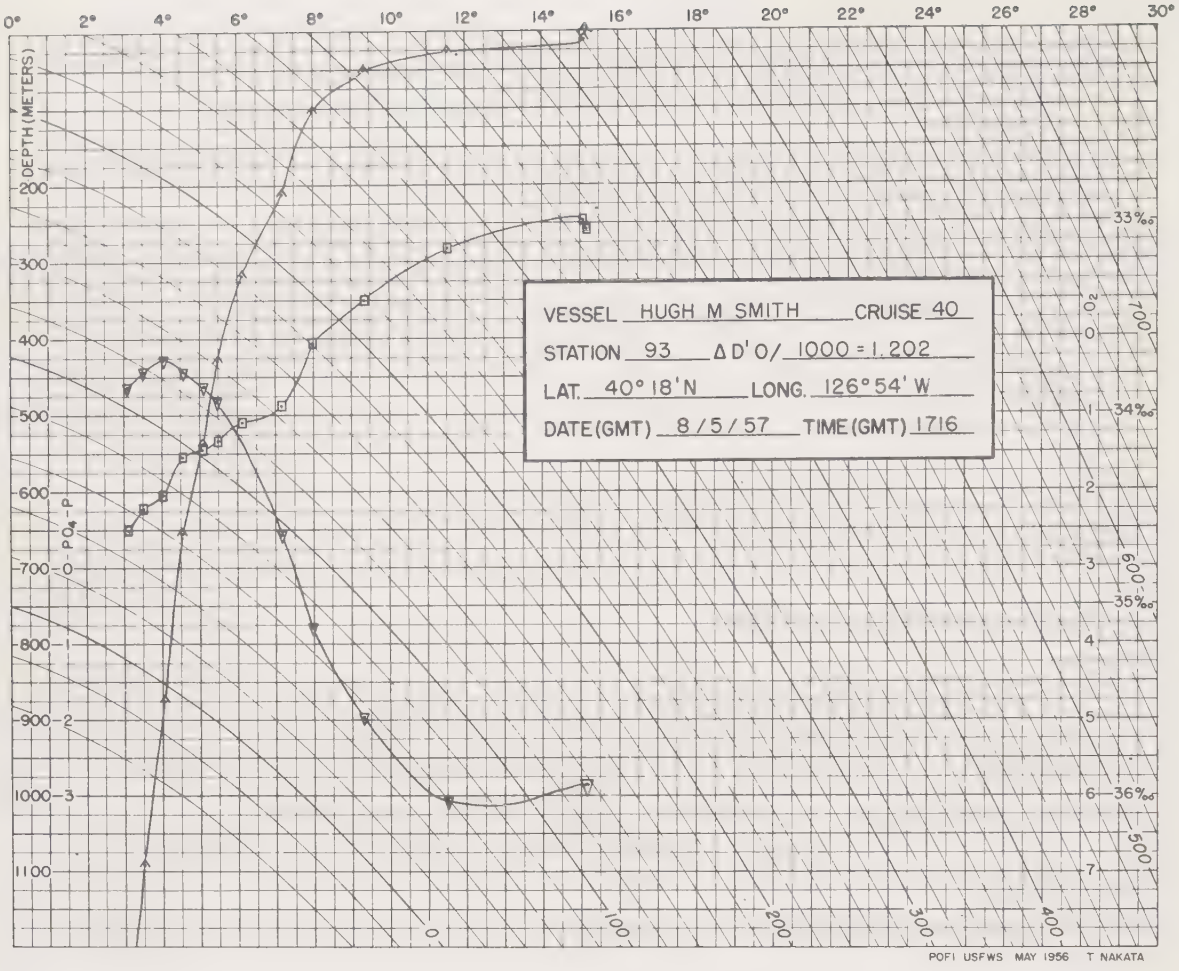
* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried


VESSEL HUGH M SMITH CRUISE 40
STATION 88 ΔD' O/ 1000 = 1.174
LAT. 40°48' N LONG. 125°00' W
DATE (GMT) 8/4/57 TIME (GMT) 1805
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 6. Wind: 160°, 13 kt. Sea: 1-3 ft. Wire angle: 17°.
BT slide: 268. Dry bulb: 60.8°F. Wet bulb: 57.3°F. Barometric pressure: 1014 mb.

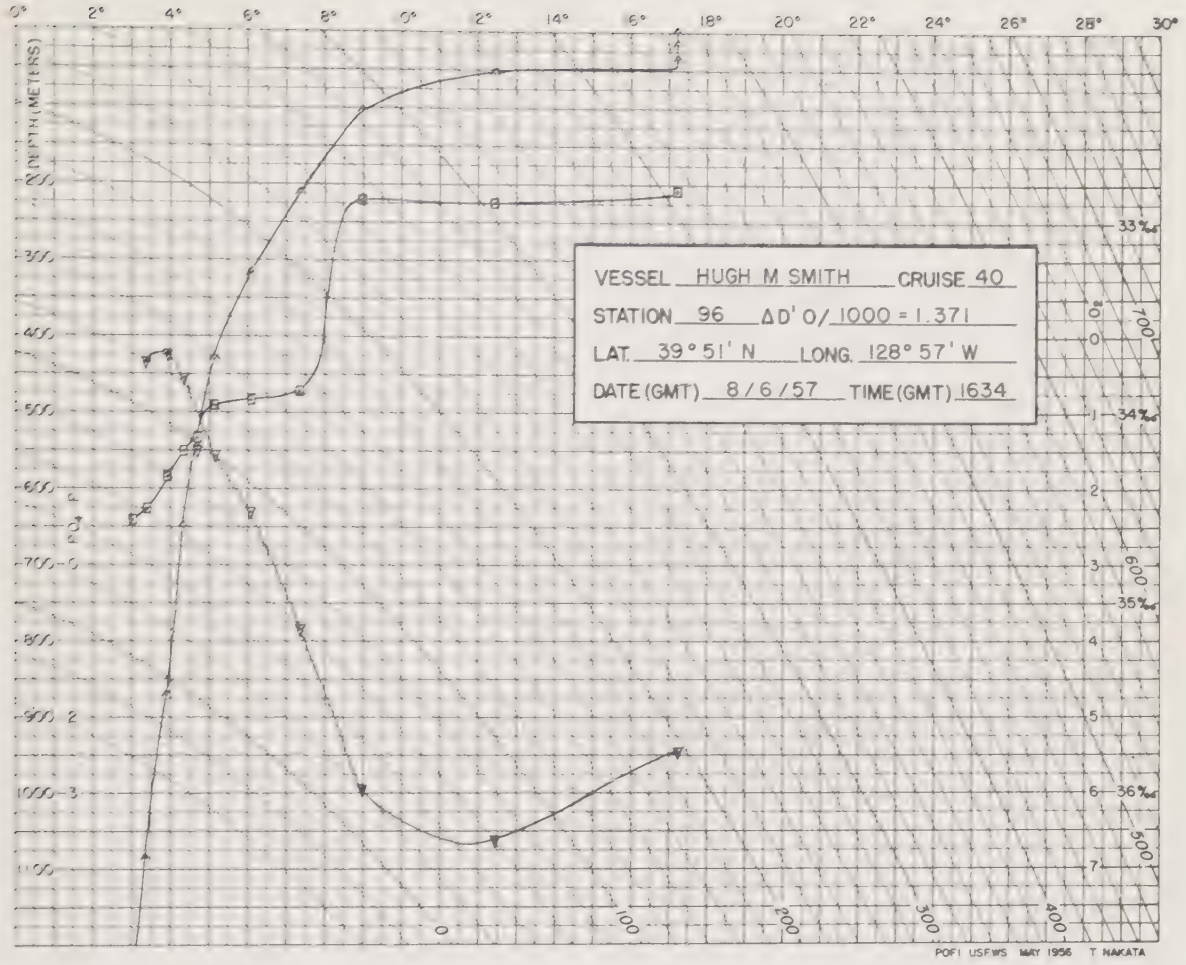
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	12.18	33.04	291.2	6.21	0.86
10	11.59	33.30	261.9	6.39	0.96
25	11.25	33.48	242.4	6.15	1.22
40	9.84	33.80	195.9	4.95	1.58
99	8.28	33.95	160.9	2.42	2.13
204	7.46	34.11	137.5	1.58	2.35
305	6.63	34.11	126.7	1.47	2.45
412	6.43	34.20	117.4	0.95	2.61
527	5.75	34.23	106.9	0.63	1.68
628	5.16	34.25	98.7	0.43	1.92
844	4.30	34.34	82.9	0.29	2.98
1051	3.72	34.45	69.0	0.34	2.96
1262	3.28	34.56	56.7	0.52	2.72*
1262					2.37*

* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 93 Δ D' O/ 1000 = 1.202
LAT. 40° 18' N LONG. 126° 54' W
DATE (GMT) 8/5/57 TIME (GMT) 1716
DEPTH (METERS)
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 5. Wind: 300°, 11 kt. Sea: 1-3 ft. Wire angle: 09°.
BT slide: 277. Dry bulb: 60.9°F. Wet bulb: 59.6°F. Barometric pressure: 1017 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, μg at./L.
0	15.16	33.03	349.9	5.84	0.67
10	15.09	32.99	351.2	5.85	0.68
26	11.54	33.13	273.3	6.08	0.82
52	9.34	33.40	217.6	4.97	1.55
103	7.98	33.62	181.2	3.78	1.78
212	7.18	33.95	145.9	2.54	2.12
318	6.14	34.04	125.7	NS	2.42
430	5.49	34.14	110.8	0.80	1.91
540	5.08	34.18	103.0	0.62	1.42
654	4.57	34.22	94.7	0.43	2.83
876	4.04	34.42	74.3	0.27	2.95
1091	3.48	34.49	63.7	0.43	1.48
1307	3.10	34.60	52.0	0.62	2.12

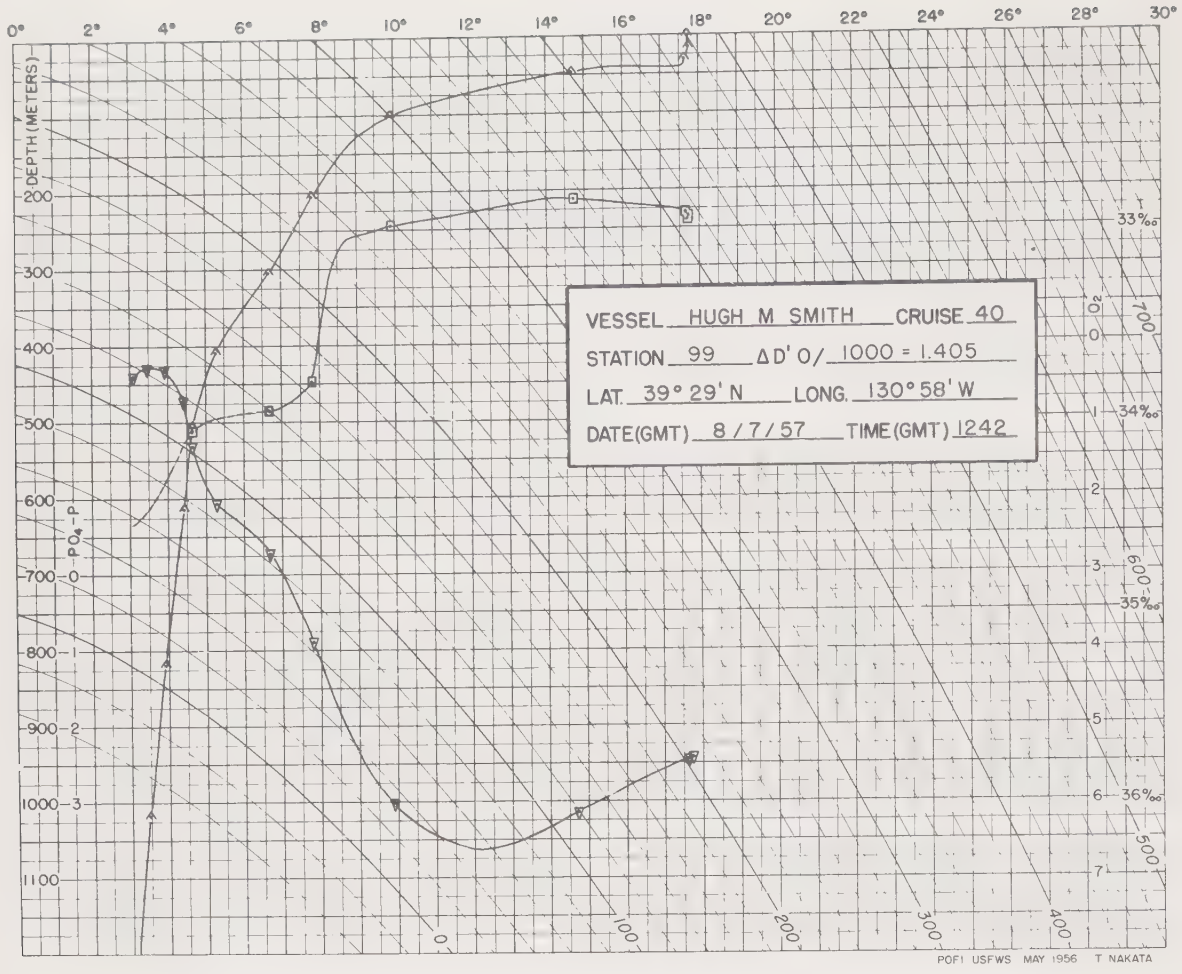

VESSEL HUGH M SMITH CRUISE 40
STATION 96 ΔD' O/ 1000 = 1.371
LAT. 39° 51' N LONG. 128° 57' W
DATE (GMT) 8/6/57 TIME (GMT) 1634
POFI USFWS MAY 1956 T NAKATA

Weather: 01, cloud coverage 7. Wind: 270°, 06 kt. Sea: 1-3 ft. Wire angle: 10°.
BT slide: 285. Dry bulb: 63.8°F. Wet bulb: 62.7°F. Barometric pressure: 1019 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	17.20	32.84	408.0	5.47	0.56
15	17.20	32.83	408.8	5.47	0.54
36	17.20	32.84	408.0	5.47	0.55
53	12.42	32.90	306.0	6.61	0.61
104	8.97	32.88	250.5	5.96	0.98
213	7.34	33.89	152.4	3.85	1.83
318	6.05	33.93	133.0	2.30	2.33
431	5.14	33.96	120.2	1.57	2.60
538	4.67	34.14	101.6	1.50	1.80
650	4.34	34.20	93.8	0.54	1.35
872	3.88	34.34	78.7	0.23	1.79
1086	3.36	34.51	61.2	0.32	1.91
1305	2.99	34.56	53.9	*	2.92 **
1305					2.82 **

* One O_2 sample missing; possibly the last.

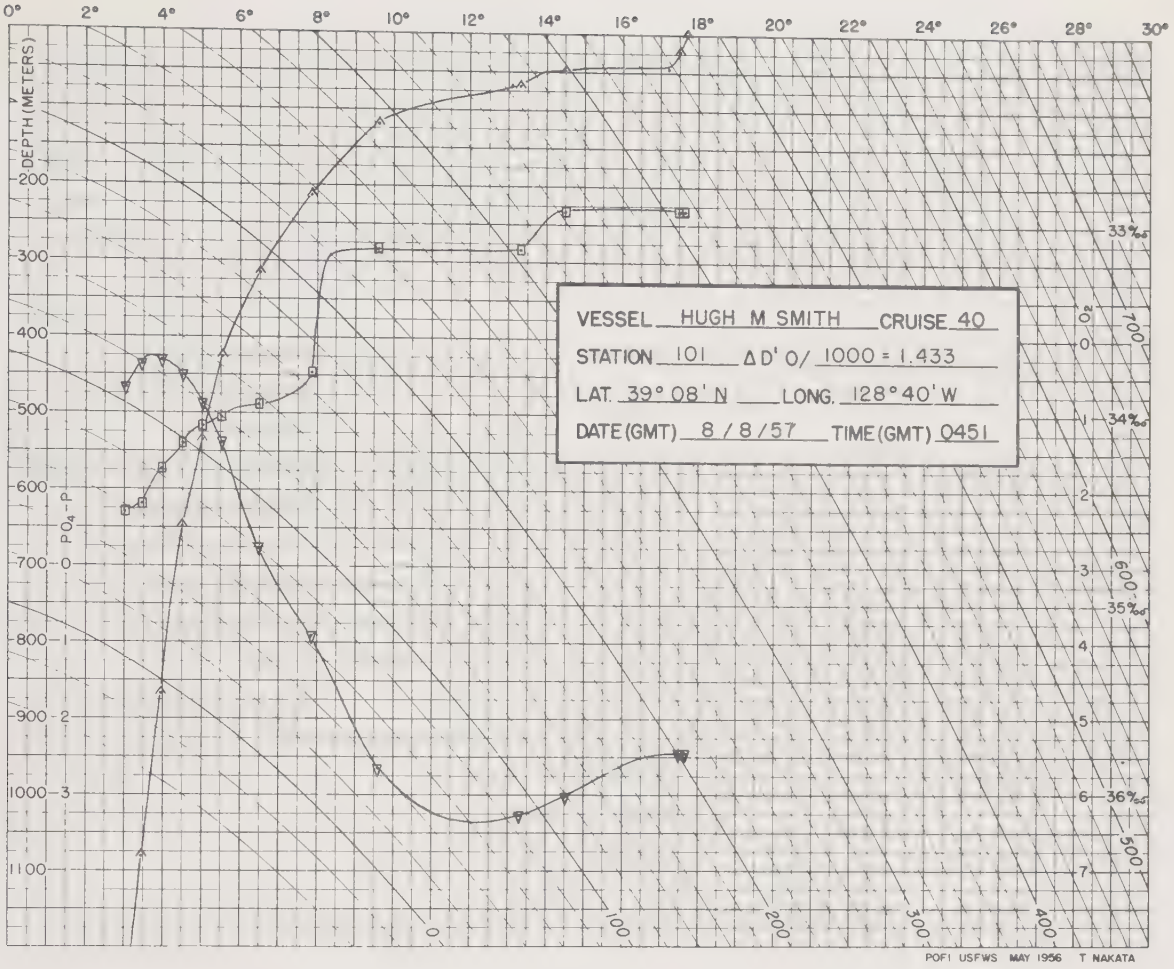
** Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 99 ΔD' O/ 1000 = 1.405
LAT. 39° 29' N LONG. 130° 58' W
DATE(GMT) 8 / 7 / 57 TIME(GMT) 1242
DEPTH (METERS)
PO4-P
POF1 USFWS MAY 1956 T. NAKATA

Weather: 00, cloud coverage not recorded. Wind: 300°, 14 kt. Sea: 3-5 ft. Wire angle: 18°. BT slide: 294. Dry bulb: 62.6°F. Wet bulb: 60.2°F. Barometric pressure: 1019 mb.

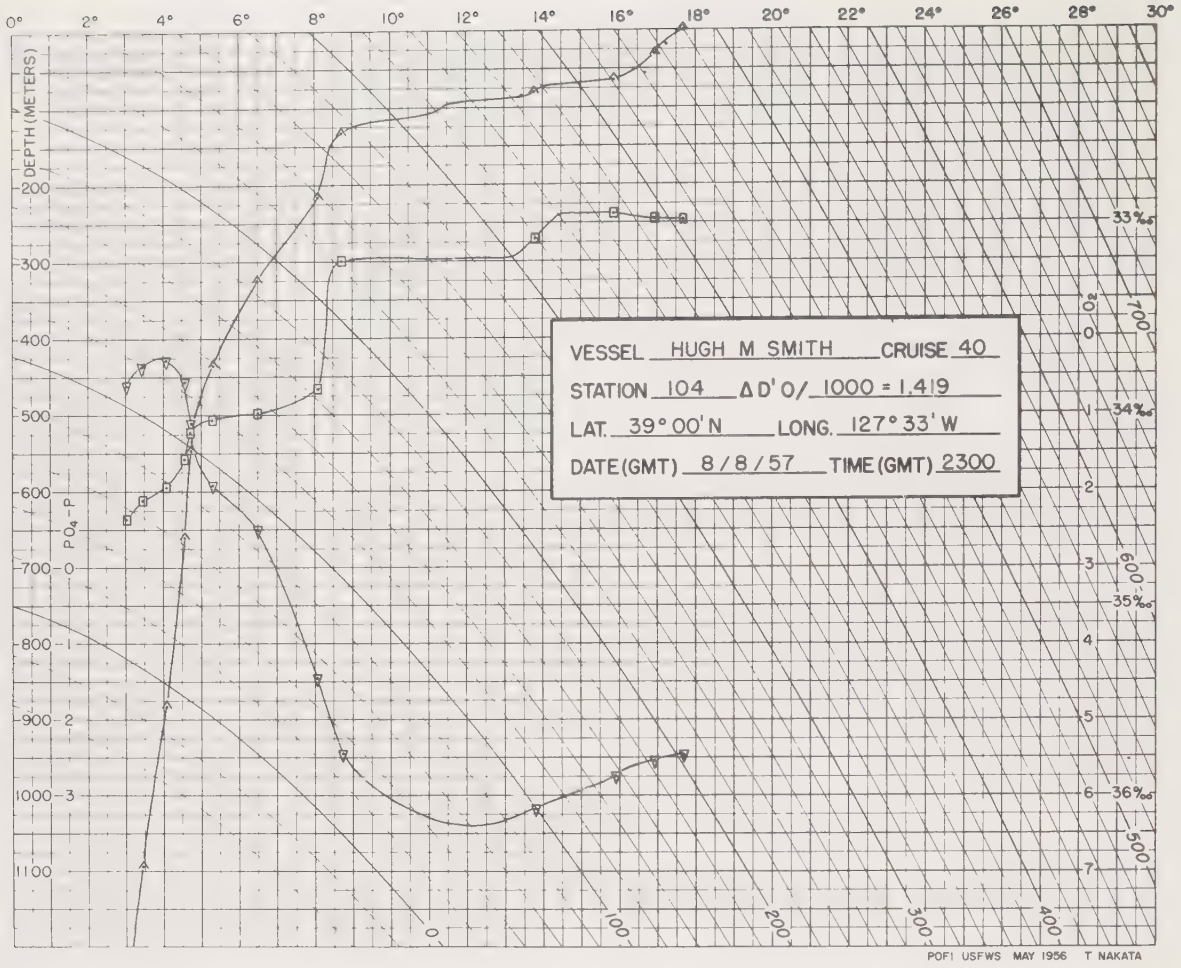
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, μg at./L.
0	17.72	32.95	411.9	5.42	0.45
15	17.74	32.94	413.0	5.41	0.46
30	17.66	32.92	412.5	5.43	0.50
45	14.70	32.84 Q	354.3	6.14	0.50
100	9.91	32.97	258.1	6.01	0.69
204	7.82	33.78	167.2	3.87	1.64
303	6.68	33.93	140.8	2.72	2.01
408	5.27	NS	-	2.06	2.28
507	4.66	34.04	109.1	1.30	1.81
613	4.42	NS	-	0.70	2.83
817	3.90	NS	-	0.31	2.87
1016	3.45	NS	-	0.28	2.87
1223	3.10	NS	-	0.38	2.75*
1223					2.83*

* Values of duplicate did not agree within 0.02 μg at./L. tolerance so both are carried.



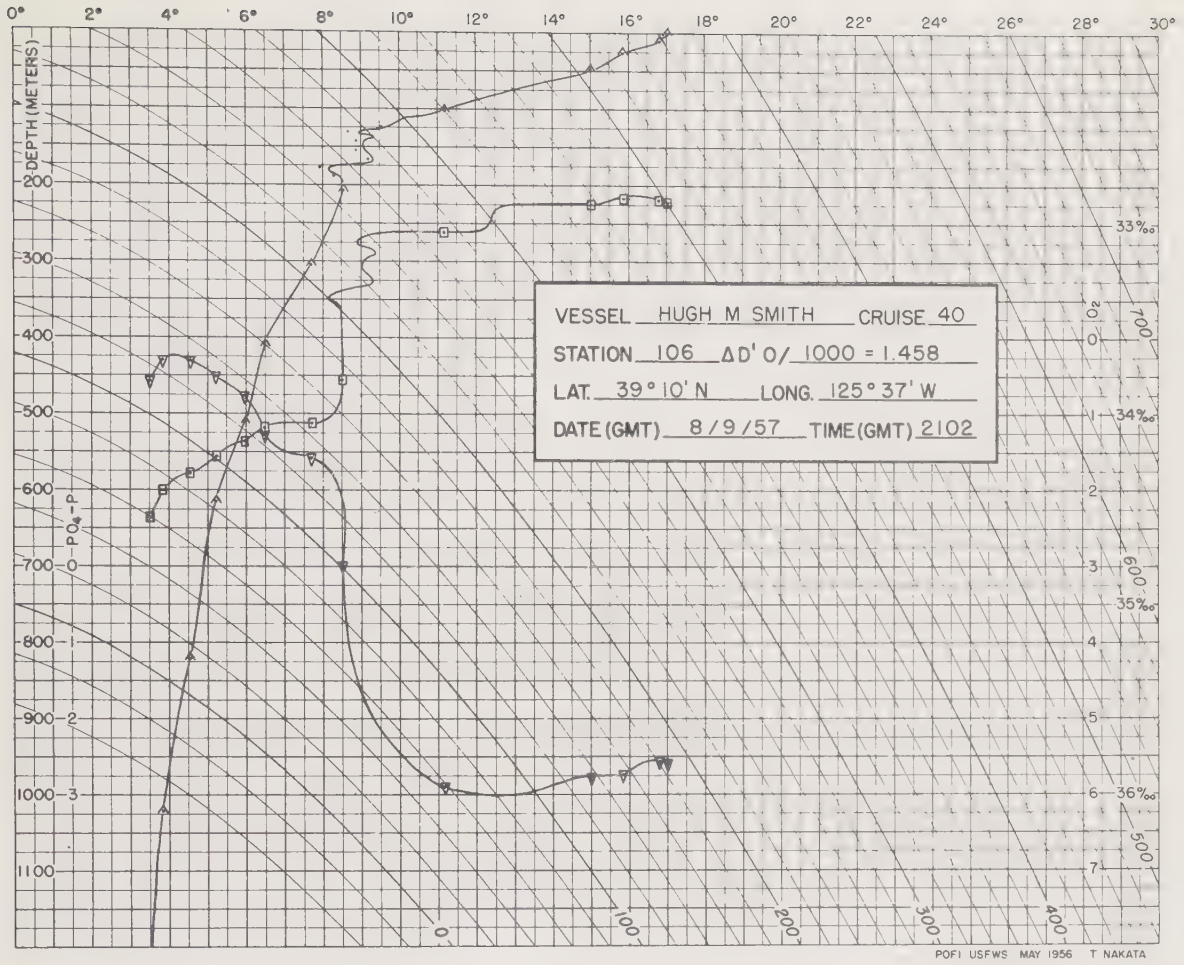
Weather: 02, cloud coverage not recorded. Wind: 310°, 14 kt. Sea: 1-3 ft. Wire angle: 09°. BT slide: 300. Dry bulb: 64.3°F. Wet bulb: 62.5°F. Barometric pressure: 1020 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, μg at./L.
0	17.67	32.92	412.7	5.43	0.57
20	17.50	32.92	409.0	5.43	0.46
46	14.51	32.92	344.7	6.02	0.51
67	13.30	33.13	305.4	6.25	0.51
118	9.60	33.13	241.3	5.65	1.08
212	7.85	33.78	167.5	3.89	1.93
316	6.50	33.95	137.1	2.74	2.40
427	5.53	34.02	120.3	1.35	2.92
534	5.02	34.07	110.6	0.85	2.93
647	4.52	34.16	98.7	0.49	3.47
867	3.93	34.29	83.0	0.31	3.57
1080	3.44	34.47	64.9	0.36	3.44
1297	3.03	34.51	58.1	0.67	3.31


VESSEL HUGH M SMITH CRUISE 40
STATION 104 ΔD' O/ 1000 = 1.419
LAT. 39° 00' N LONG. 127° 33' W
DATE (GMT) 8/8/57 TIME (GMT) 2300
DEPTH (METERS)
PO4-P
POF1 USFWS MAY 1956 T NAKATA

Weather: 01, cloud coverage 6. Wind: 310°, 06 kt. Sea: 1-3 ft. Wire angle: 08°.
BT slide: 307. Dry bulb: 67.0°F. Wet bulb: 59.3°F. Barometric pressure: 1021 mb.

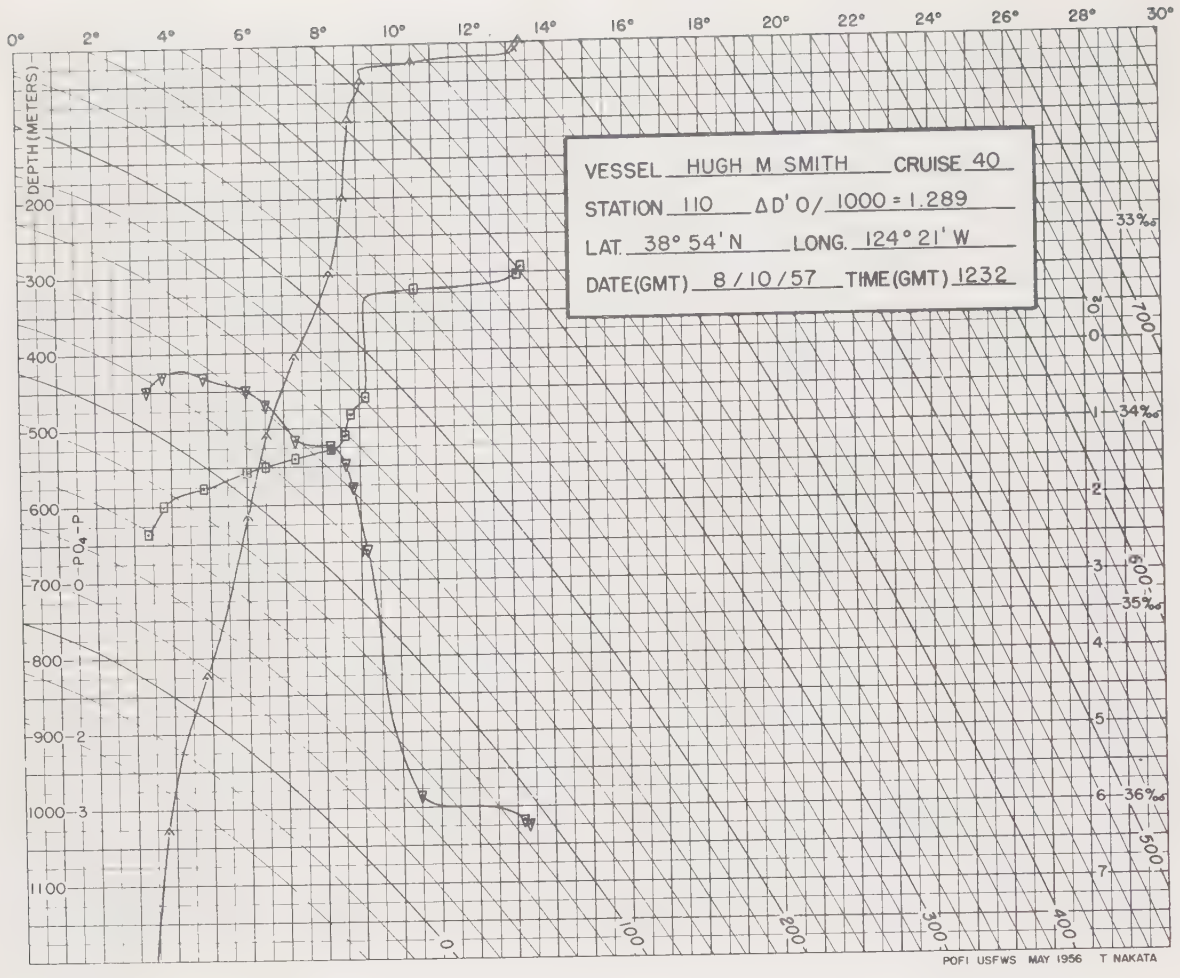
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	17.67	32.99	407.5	5.47	NS
31	16.94	32.98	391.9	5.54	0.52
63	15.86	32.95	370.2	5.74	0.57
79	13.78	33.08	318.3	6.18	0.60
131	8.73	33.19	224.0	5.46	1.40
216	8.06	33.86	164.6	4.45	1.82
323	6.52	33.99	134.3	2.51	2.64
437	5.31	34.02	117.7	1.92	2.78
547	4.74	34.09	106.2	1.10	3.06
660	4.58	34.23	94.0	0.55	3.55
882	4.06	34.38	77.5	0.29	3.54
1094	3.42	34.45	66.2	0.37	3.60
1305	3.03	34.54	55.9	0.60	3.56


VESSEL HUGH M SMITH CRUISE 40
STATION 106 ΔD' O/ 1000 = 1.458
LAT. 39° 10' N LONG. 125° 37' W
DATE (GMT) 8/9/57 TIME (GMT) 2102
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 01, cloud coverage 6. Wind: 340°, 08 kt. Sea: 1-3 ft. Wire angle: 18°.
BT slide: 314. Dry bulb: 64.0°F. Wet bulb: 60.0°F. Barometric pressure: 1019 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	17.02	32.88	400.9	5.58	0.56
10	16.80	32.87	396.2	5.57	0.61
25	15.84	32.86	374.5	5.73	0.51
50	15.02	32.89	357.1	5.74	0.70
100	11.18	33.04	273.7	5.89	1.00
205	8.54	33.82	174.4	2.98	2.23
304	7.68	34.05	145.1	1.55	2.79
409	6.50	34.07	128.0	1.27	2.97
509	5.96	34.14	116.1	0.75	3.04
614	5.22	34.22	101.6	0.51	NG
820	4.56	34.31	87.8	0.31	3.54
1020	3.84	34.40	73.9	0.29	3.54
1226	3.52	34.54	60.5	0.55	3.51*
1226					3.46*

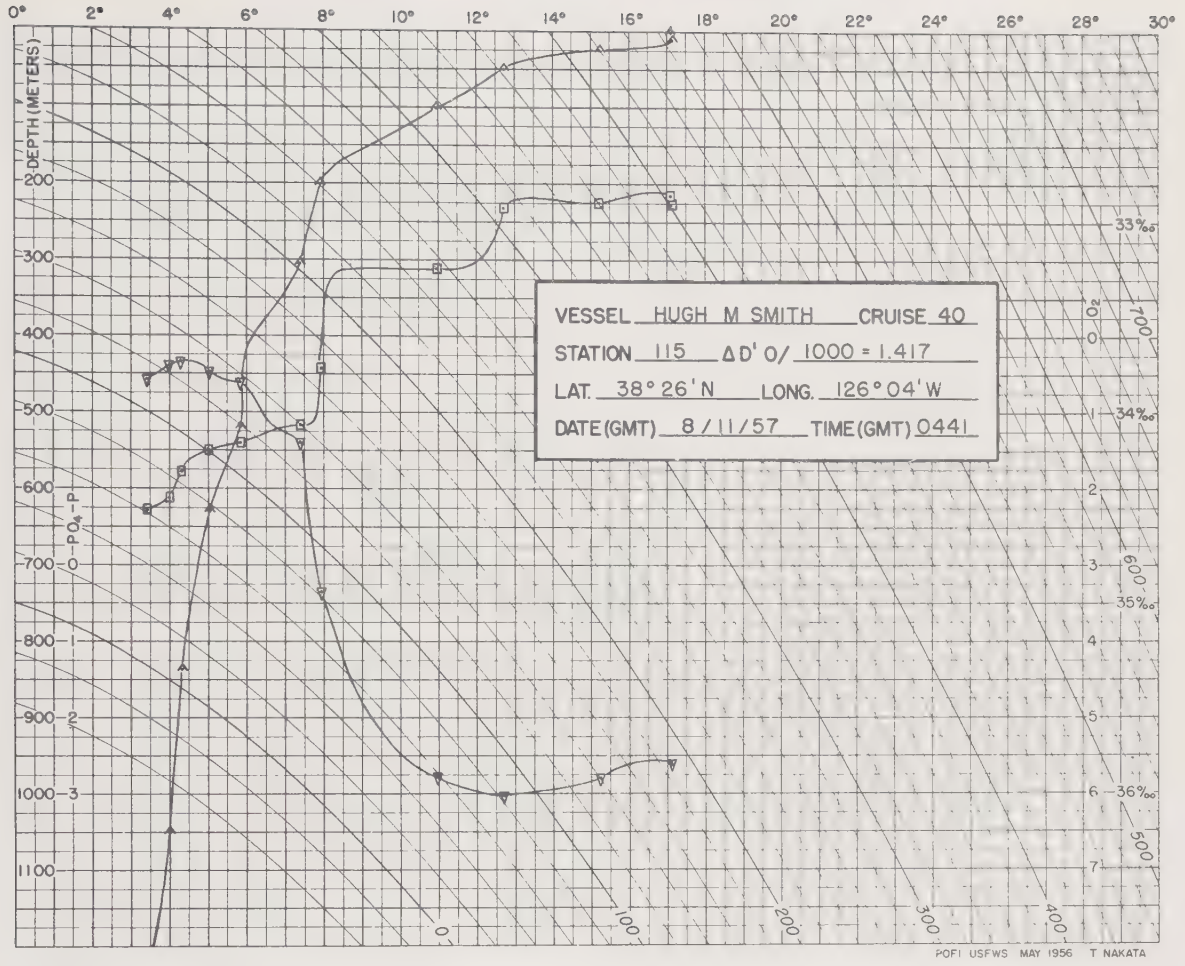
* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 110 ΔD' O/ 1000 = 1.289
LAT. 38° 54' N LONG. 124° 21' W
DATE(GMT) 8/10/57 TIME(GMT) 1232
DEPTH (METERS)
PO4 - P
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 1. Wind: 330°, 18 kt. Sea: 3-5 ft. Wire angle: 24°.
BT slide: 318. Dry bulb: 58.9°F. Wet bulb: 57.1°F. Barometric pressure: 1015 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	13.33	33.17	303.1	6.22	1.17
10	13.18	33.21	297.3	6.18	1.09
24	10.48	33.28	244.2	5.84	1.36
49	9.16	33.84	182.1	2.61	2.65
98	8.80	33.93	170.0	1.78	2.12
202	8.62	34.04	159.3	1.47	2.55
301	8.24	34.11	148.5	1.24	2.74
408	7.30	34.16	131.6	1.16	2.76
510	6.54	34.20	118.9	0.68	2.11
617	6.01	34.23	110.0	0.49	3.53
825	4.87	34.31	90.8	0.31	3.50
1029	3.79	34.40	73.2	0.27	3.66
1237	3.38	34.54	59.0	0.47	3.44*
1237					3.28*

* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.

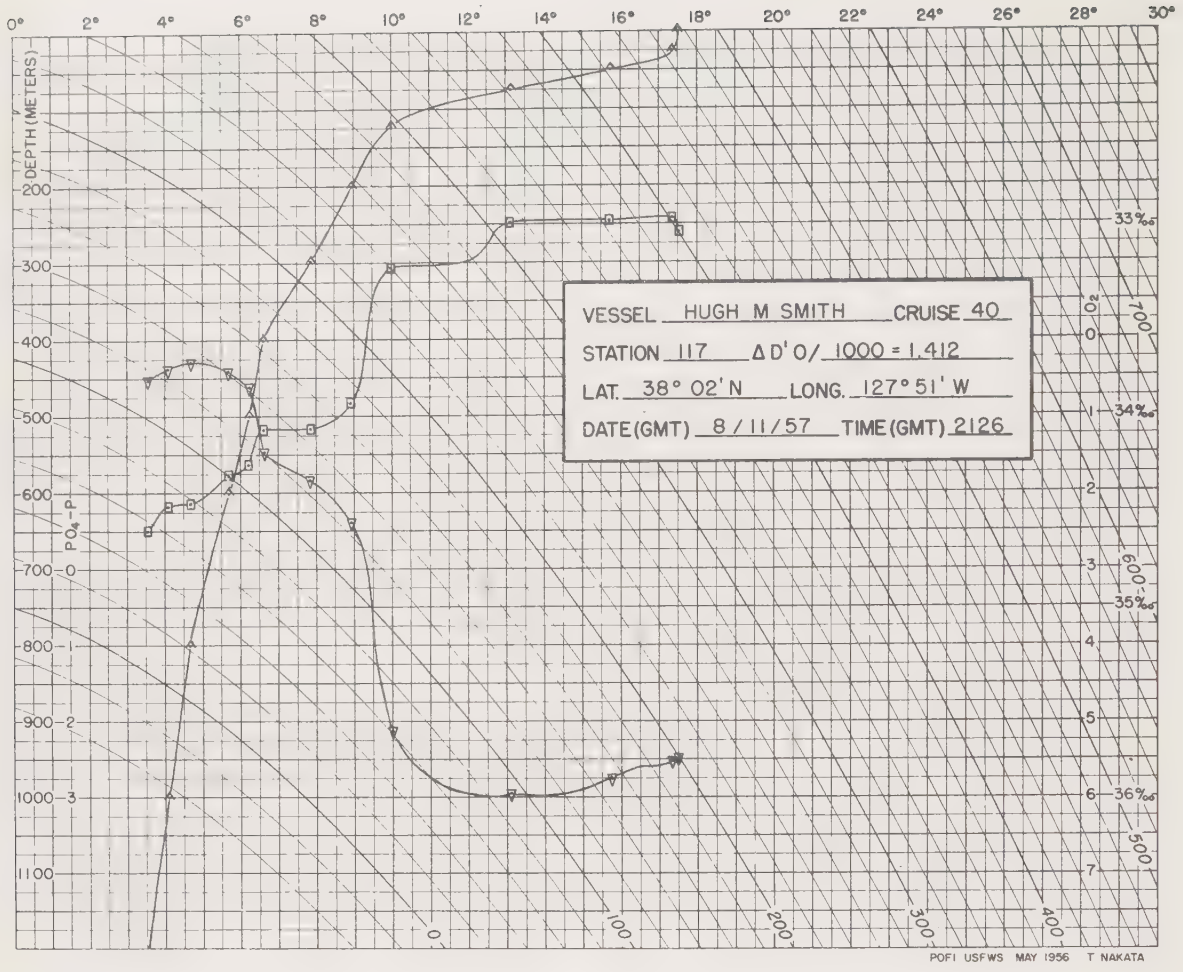

VESSEL HUGH M SMITH CRUISE 40
STATION 115 ΔD' O/ 1000 = 1.417
LAT. 38° 26' N LONG. 126° 04' W
DATE (GMT) 8/11/57 TIME (GMT) 0441
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 2. Wind: 330°, 22 kt. Sea: 3-5 ft. Wire angle: 27°.
BT slide: 326. Dry bulb: 62.8°F. Wet bulb: 59.2°F. Barometric pressure: 1018 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	17.10	32.86	404.2	5.60	0.56
9	17.12	32.90	402.0	5.62	0.54
23	15.23	32.89	361.6	5.80	0.74
50	12.72	32.97	306.4	6.03	1.02
100	10.95	33.25	254.2	5.78	1.31
201	7.94	33.77	169.5	3.34	2.27
305	7.40	34.07	139.8	1.40	2.67
PT	-	-	-	-	-
521	5.84	34.16	113.3	0.61	3.12*
628	5.04	34.20	101.0	0.47	3.40
837	4.32	34.31	85.3	0.33	3.56
1049	3.98	34.45	71.3	0.39	3.91
1255	3.42	34.51	61.7	0.58	3.54**
1255					3.39**

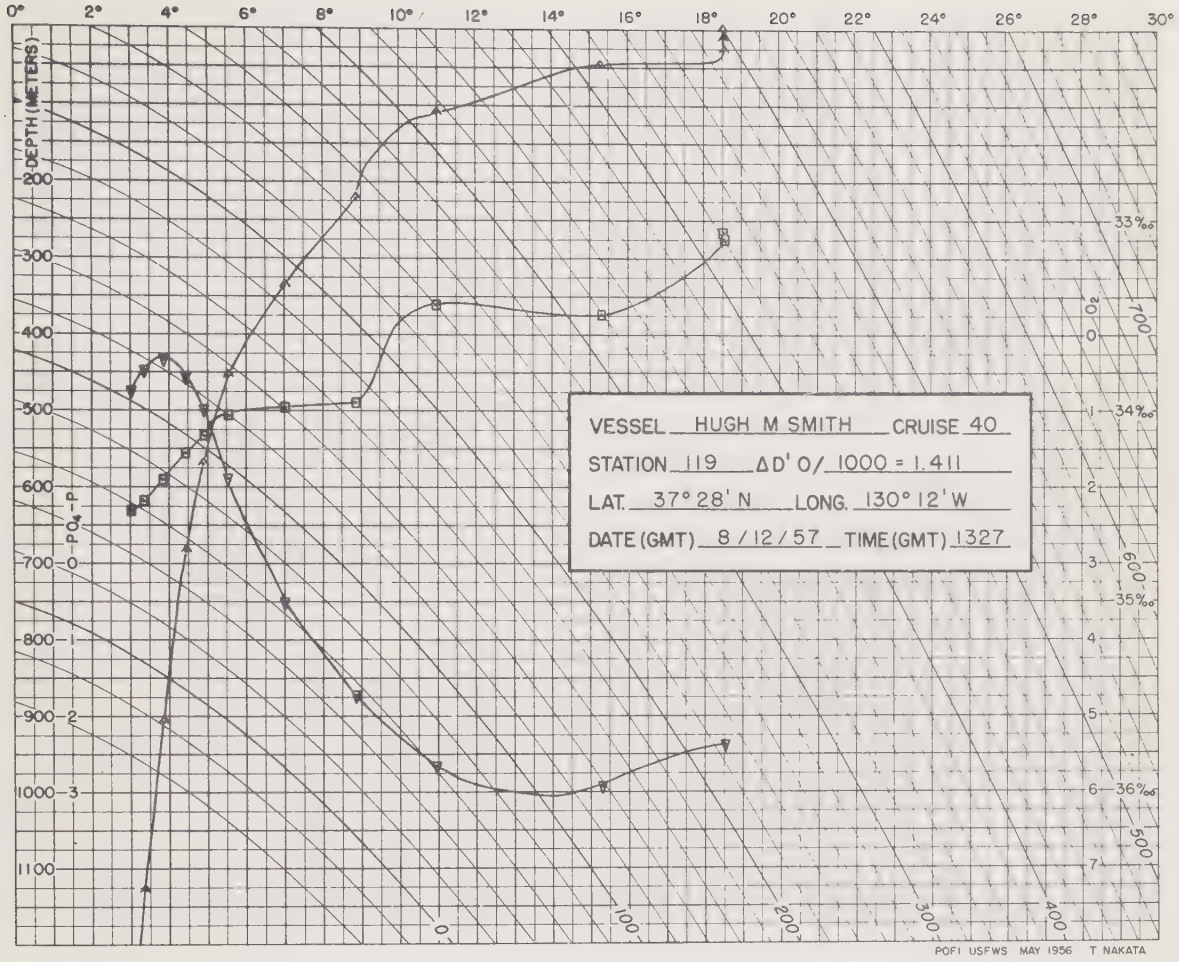
* Spilled part of sample.

** Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 117 Δ D' O/ 1000 = 1.412
LAT. 38° 02' N LONG. 127° 51' W
DATE (GMT) 8 / 11 / 57 TIME (GMT) 2126
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 01, cloud coverage 2. Wind: 330°, 14 kt. Sea: 1-3 ft. Wire angle: 22°.
BT slide: 333. Dry bulb: 64.7°F. Wet bulb: 60.8°F. Barometric pressure: 1021 mb.

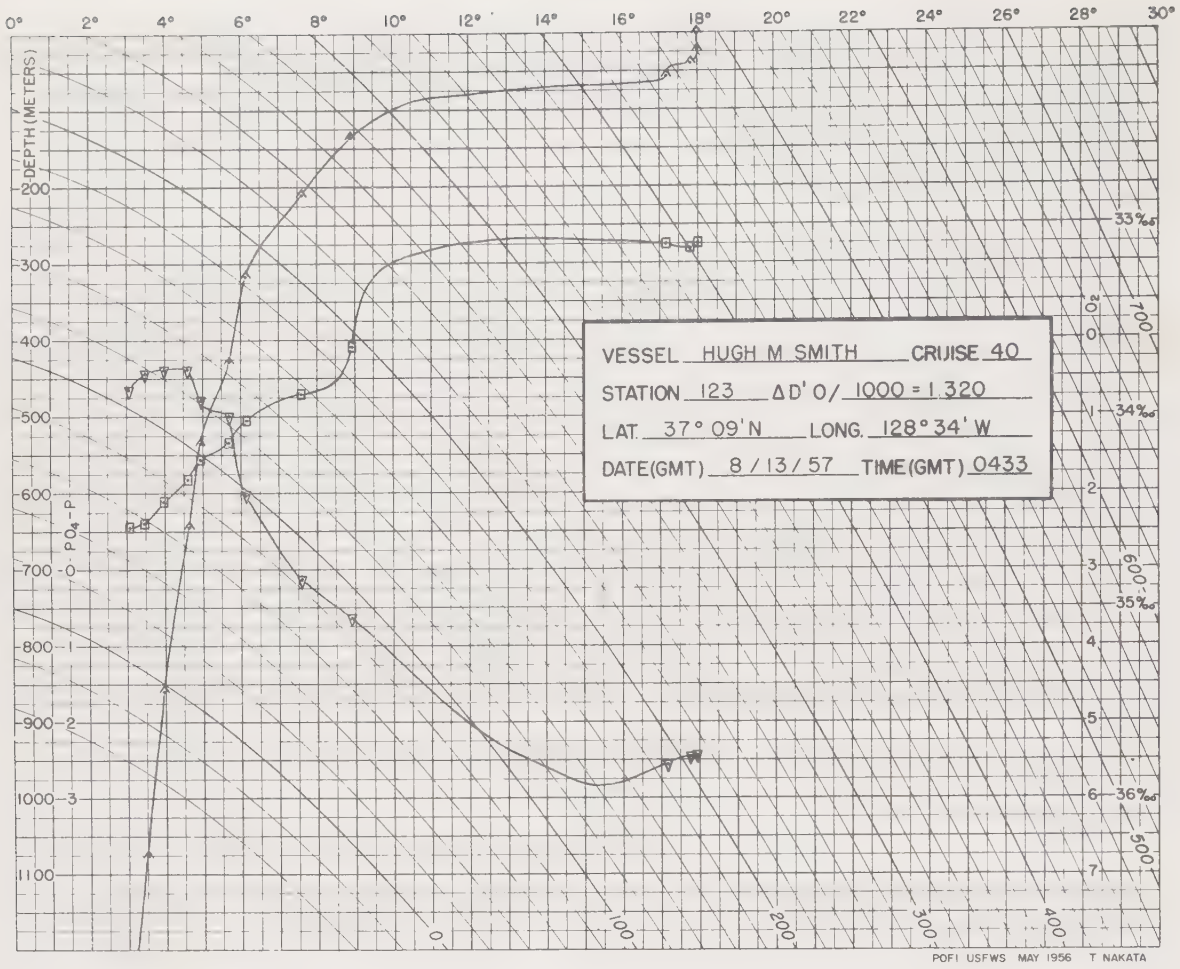
Depth, m.	T, °C.	S, °/oo	δ t, cl. /ton	O_2, ml. /L.	PO_4-P, μg at. /L.
0	17.52	33.04	400.7	5.49	0.50
25	17.35	32.97	401.8	5.53	0.50
49	15.74	32.98	365.9	5.74	0.56
73	13.12	32.99	312.3	5.95	0.82
122	10.00	33.25	238.9	5.13	1.40
200	8.94	33.93	172.1	2.39	2.35
297	7.85	34.07	145.9	1.83	2.45
400	6.63	34.07	129.6	1.46	2.68
498	6.27	34.25	111.6	0.61	1.60
601	5.71	34.31	100.6	0.40	2.94
801	4.68	34.45	78.5	0.29	3.14
999	4.08	34.47	70.9	0.35	2.83
1204	3.56	34.60	56.2	0.51	2.42


VESSEL HUGH M SMITH CRUISE 40
STATION 119 ΔD' O/ 1000 = 1.411
LAT. 37° 28' N LONG. 130° 12' W
DATE (GMT) 8 / 12 / 57 TIME (GMT) 1327
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather 02, cloud coverage 8. Wind: 320°, 11 kt. Sea: 1-3 ft. Wire angle: 17°.
BT slide: 342. Dry bulb: 64.7°F. Wet bulb: 59.2°F. Barometric pressure: 1023 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, μg at./L.
0	18.51	33.06	422.1	5.37	NS
10	18.54	33.10	420.0	5.37	0.41
25	18.55	33.10	420.1	5.36	0.51
45	15.27	33.49	318.7	5.92	0.47
111	10.96	33.44	240.3	5.66	0.62
222	8.86	33.95	169.4	4.72	1.38
335	7.01	33.98	141.4	3.50	1.59
454	5.56	34.02	120.5	1.88	1.87
569	4.90	34.13	104.9	0.99	1.75
683	4.44	34.22	93.3	0.56	1.98
907	3.85	34.36	77.0	0.31	2.72
1129	3.37	34.47	64.3	0.46	2.31
1341	3.02	34.52	57.5	0.73	1.89*
1341					2.09*

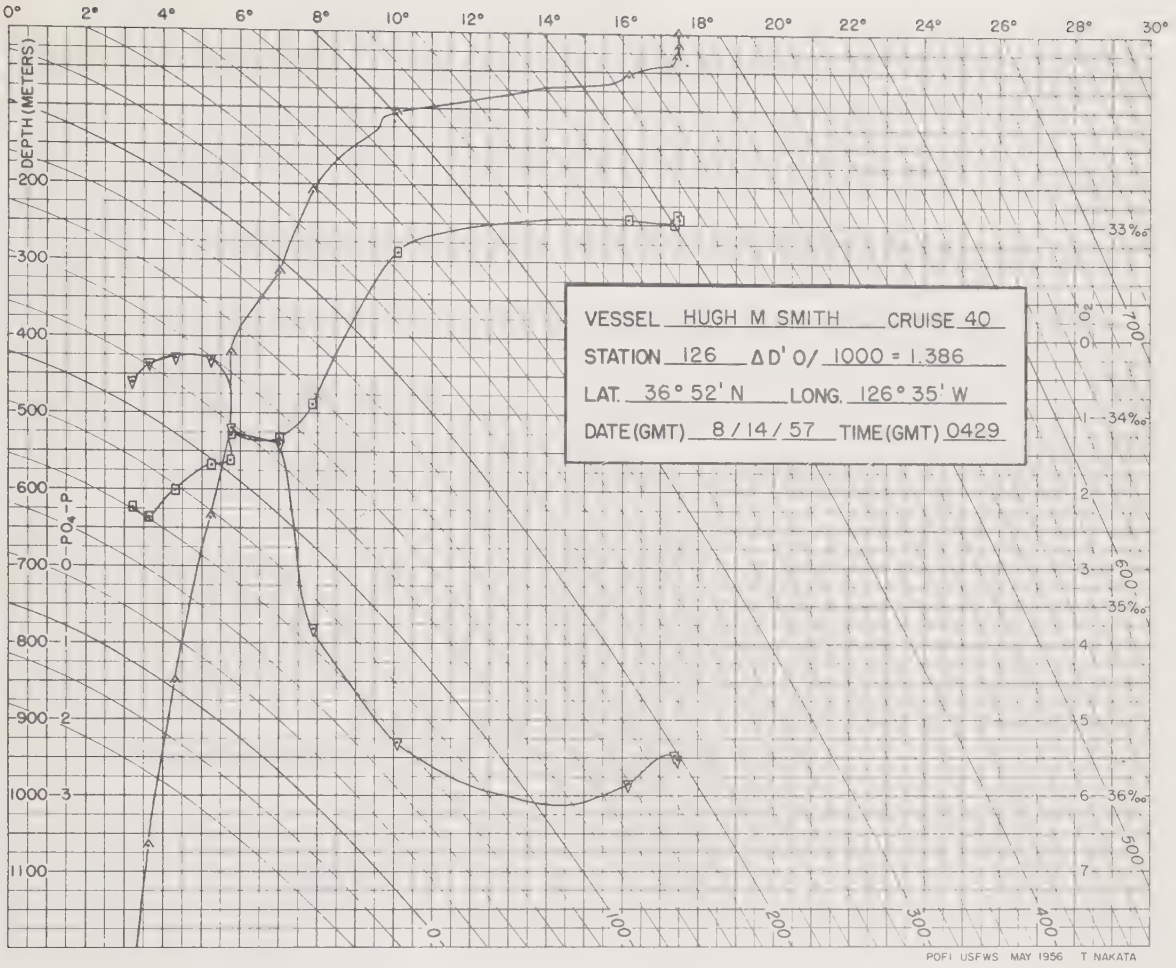
* Values of duplicate did not agree within 0.02 μg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 123 ΔD' O/ 1000 = 1.320
LAT. 37° 09' N LONG. 128° 34' W
DATE(GMT) 8 / 13 / 57 TIME(GMT) 0433
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 8. Wind: 000°, 15 kt. Sea: 3-5 ft. Wire angle: 22°.
BT slide: 348. Dry bulb: 64.3°F. Wet bulb: 60.0°F. Barometric pressure: 1023 mb.

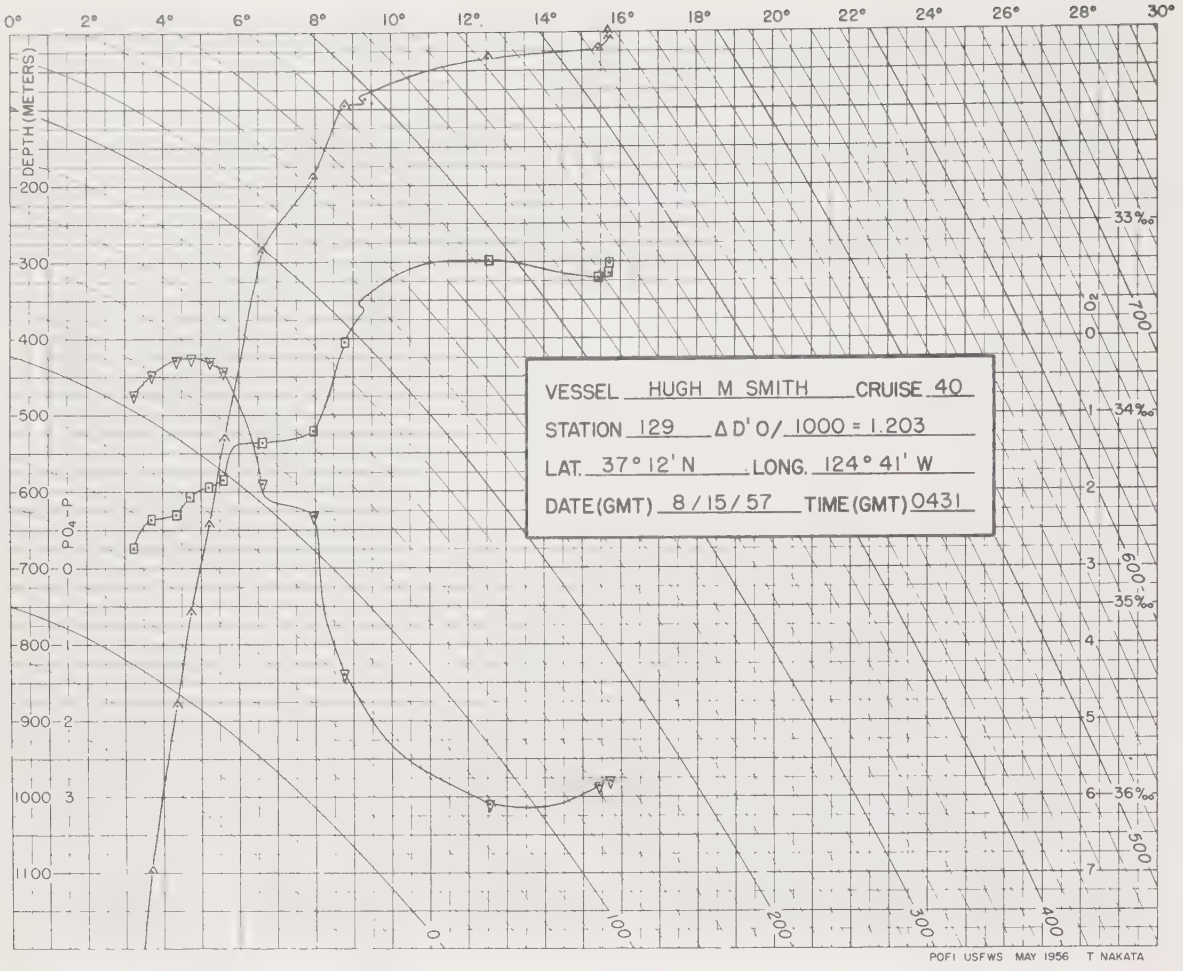
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	17.94	33.10	406.0	5.45	0.50
19	17.96	33.10	406.3	5.43	0.48
38	17.78	33.12	400.6	5.46	0.50
57	17.15	33.10	387.8	5.56	0.49
134	8.90	33.64	193.0	3.63	1.24
210	7.60	33.89	156.0	3.13	1.58
316	6.14	34.02	127.2	2.01	1.99
428	5.68	34.14	112.9	1.00	2.45
536	4.94	34.22	98.5	0.79	2.10
645	4.62	34.33	87.0	0.37	2.30
859	3.96	34.45	71.1	0.39	2.22
1075	3.46	34.56	58.3	0.44	2.50
1280	3.06	34.58	53.1	0.64	2.08*
1280					1.93*

* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 126 ΔD' O/ 1000 = 1.386
LAT. 36° 52' N LONG. 126° 35' W
DATE (GMT) 8 / 14 / 57 TIME (GMT) 0429
DEPTH (METERS)
PO4-P
33‰
34‰
35‰
36‰
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 2. Wind: 330°, 20 kt. Sea: 3-5 ft. Wire angle: 29°.
BT slide: 356. Dry bulb: 63.0°F. Wet bulb: 60.9°F. Barometric pressure: 1020 mb.

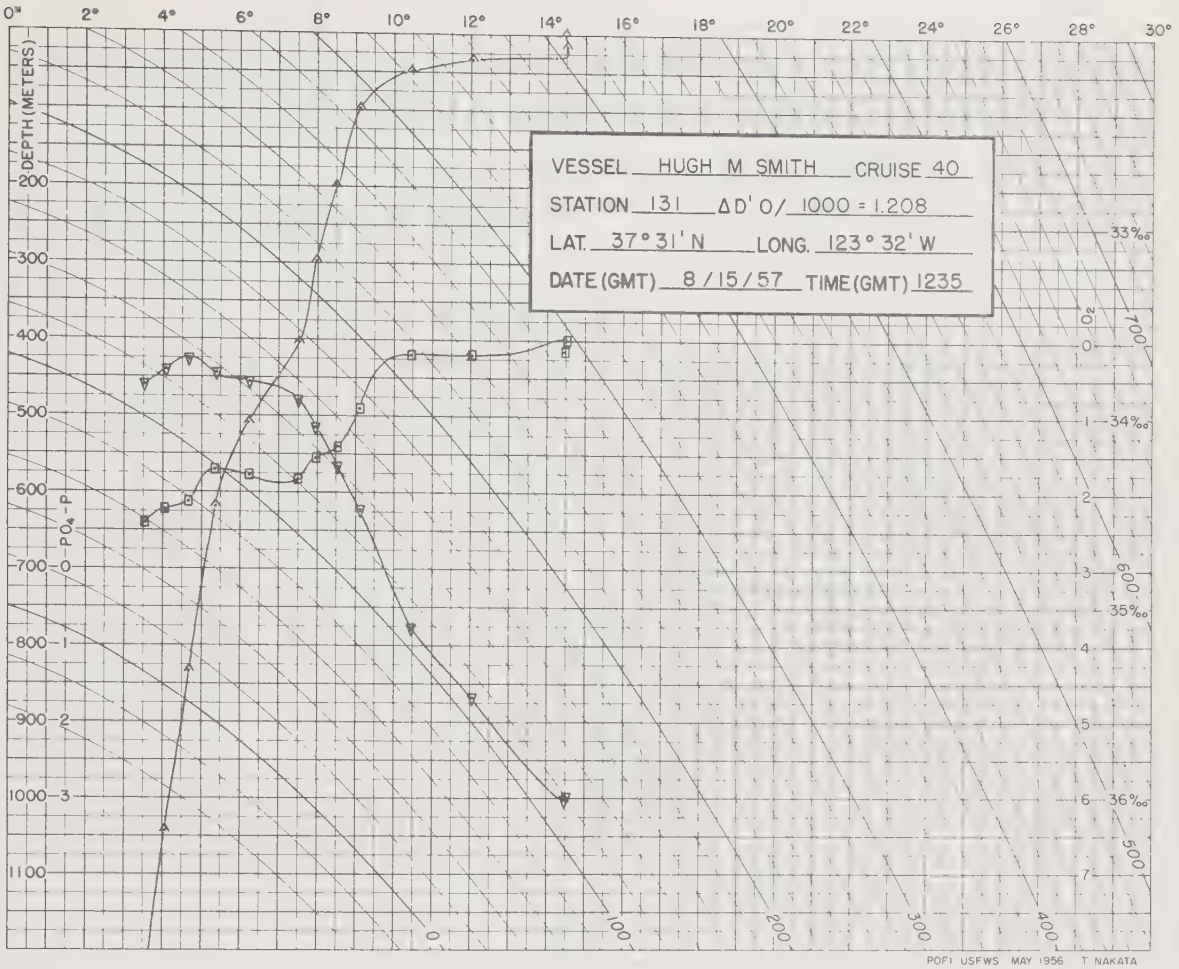
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, μg at./L.
0	17.44	32.95	405.2	5.50	0.57
15	17.46	32.97	404.1	5.50	0.51
29	17.40	32.99	401.2	5.48	0.54
53	16.16	32.97	375.4	5.84	0.55
105	10.08	33.15	247.6	5.30	1.23
209	7.88	33.95	155.2	3.80	1.94
314	7.01	34.13	129.9	1.40	2.10
422	5.77 Q	34.11	116.2	1.22	3.04
528	5.73	34.25	105.2	0.54	1.78
636	5.22	34.27	97.9	0.30	3.04
850	4.32	34.40	78.6	0.27	3.39
1065	3.62	34.54	61.2	0.36	2.82
1272	3.18	34.49	61.0	0.60	2.87


VESSEL HUGH M SMITH CRUISE 40
STATION 129 Δ D' O/ 1000 = 1.203
LAT. 37° 12' N LONG. 124° 41' W
DATE(GMT) 8/15/57 TIME(GMT) 0431
DEPTH (METERS)
PO4 - P
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 1. Wind: 320°, 17 kt. Sea: 3-5 ft. Wire angle: 28°, 28°. BT slide: 365. Dry bulb: 61.1°F. Wet bulb: 59.2°F. Barometric pressure: 1017 mb.

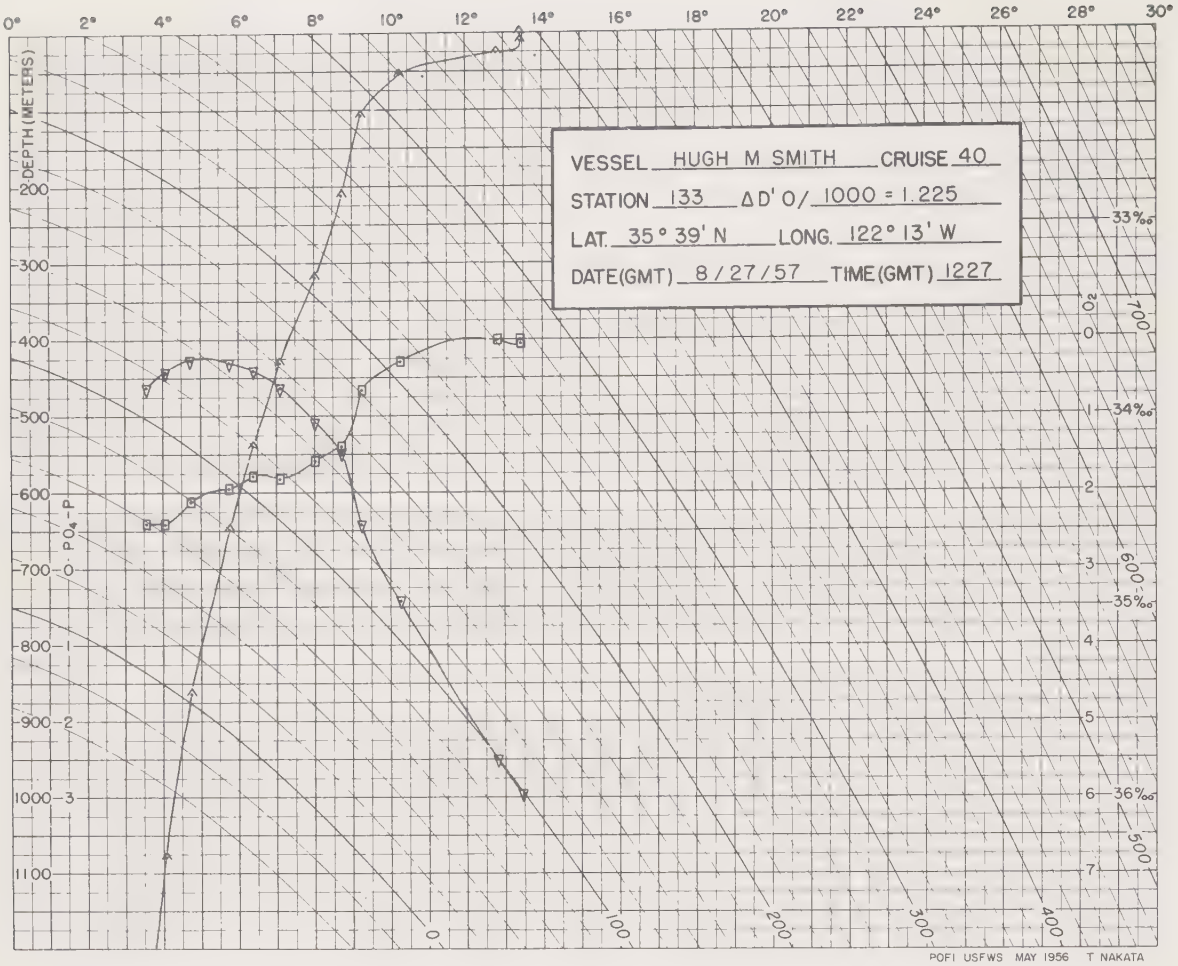
	Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
	0	15.68	33.21	347.8	5.80	0.57
	8	15.70	33.26	344.6	5.79	0.84
	21	15.42	33.28	337.0	5.85	0.64
	34	12.56	33.19	287.1	6.10	0.73
	95	8.78	33.62	192.8	4.38	1.09
	190	7.94	34.09	145.6	2.32	2.08
I	287	6.64	34.14	124.5	1.88	2.11
II	534	5.61	34.34	97.2	0.43	3.06
	645	5.22	34.38	89.7	0.31	2.80
	759	4.74	34.43	80.6	0.26	2.95
	879	4.36	34.52	70.0	0.28	2.80
	1099	3.70	34.54	62.0	0.48	2.97
	1308	3.24	34.69	46.5	0.73	2.66*
	1308					2.83*

* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 131 ΔD' 0/ 1000 = 1.208
LAT. 37° 31' N LONG. 123° 32' W
DATE (GMT) 8/15/57 TIME (GMT) 1235
DEPTH (METERS)
PO4 - P
POFI USFWS MAY 1956 T NAKATA

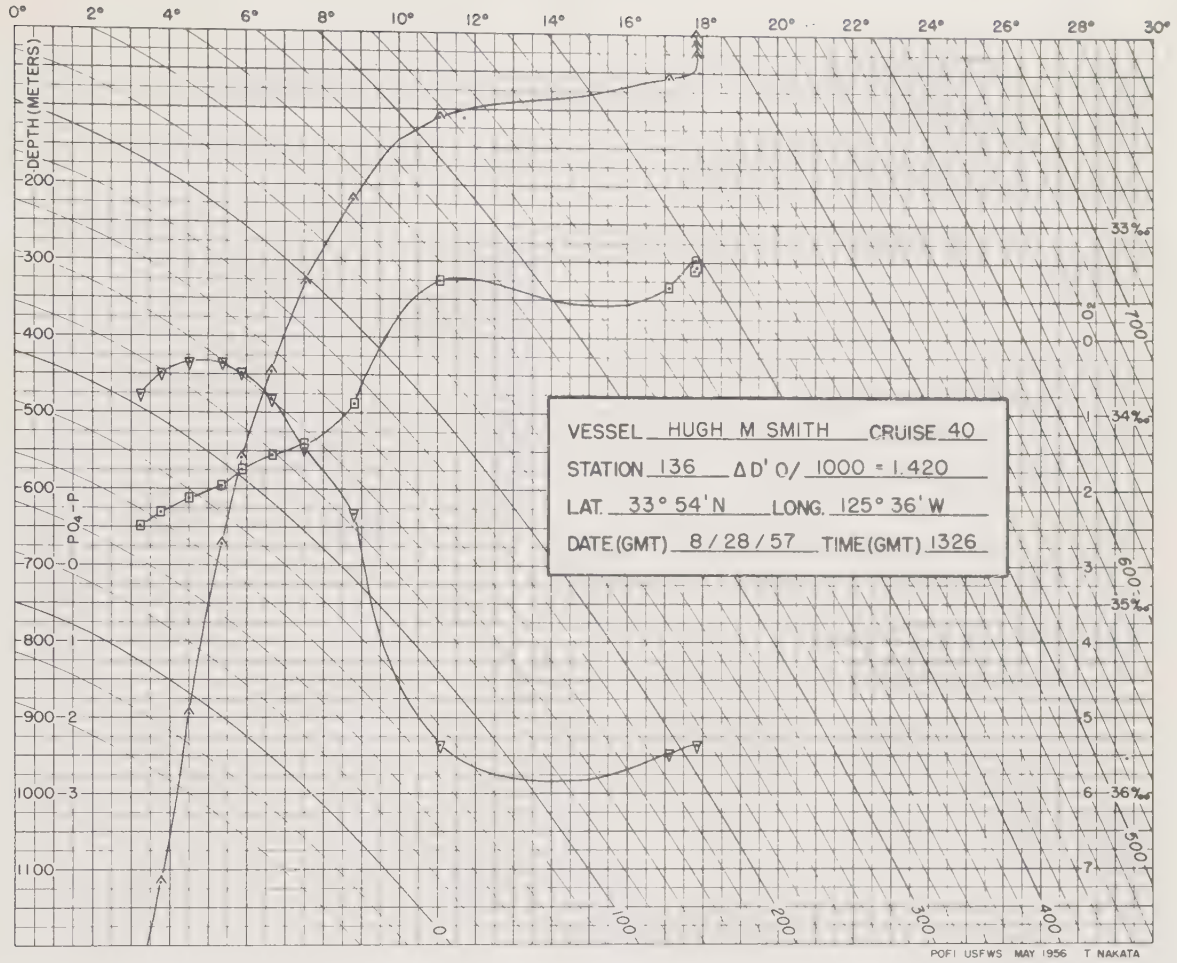
Weather: 00, cloud coverage not recorded. Wind: 320°, 23 kt. Sea: 5-8 ft. Wire angle: 27°. BT slide: 369. Dry bulb: 58.3°F. Wet bulb: 56.4°F. Barometric pressure: 1016 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	14.46	33.66	289.4	6.02	0.63
14	14.52	33.60	295.0	6.00	0.63
33	12.04	33.68	241.8	4.68	1.50
48	10.44	33.68	214.1	3.77	1.76
96	9.11	33.96	172.7	2.24	1.27
198	8.54	34.16	149.2	1.67	2.22
297	7.96	34.22	136.1	1.14	2.27
403	7.52	34.33	122.0	0.79	2.09
508	6.24	34.34	106.8	0.54	2.83
618	5.36	34.29	98.0	0.44	2.34
834	4.66	34.45	78.3	0.26	1.57
1043	4.04	34.49	69.0	0.40	3.03
1255	3.52	34.56	58.9	0.59	2.43


VESSEL HUGH M SMITH CRUISE 40
STATION 133 ΔD' O/ 1000 = 1.225
LAT. 35° 39' N LONG. 122° 13' W
DATE(GMT) 8/27/57 TIME(GMT) 1227
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 00, cloud coverage 2. Wind: 320°, 18 kt. Sea: 3-5 ft. Wire angle: 26°.
BT slide: 374. Dry bulb: 59.8°F. Wet bulb: 57.0°F. Barometric pressure: 1020 mb.

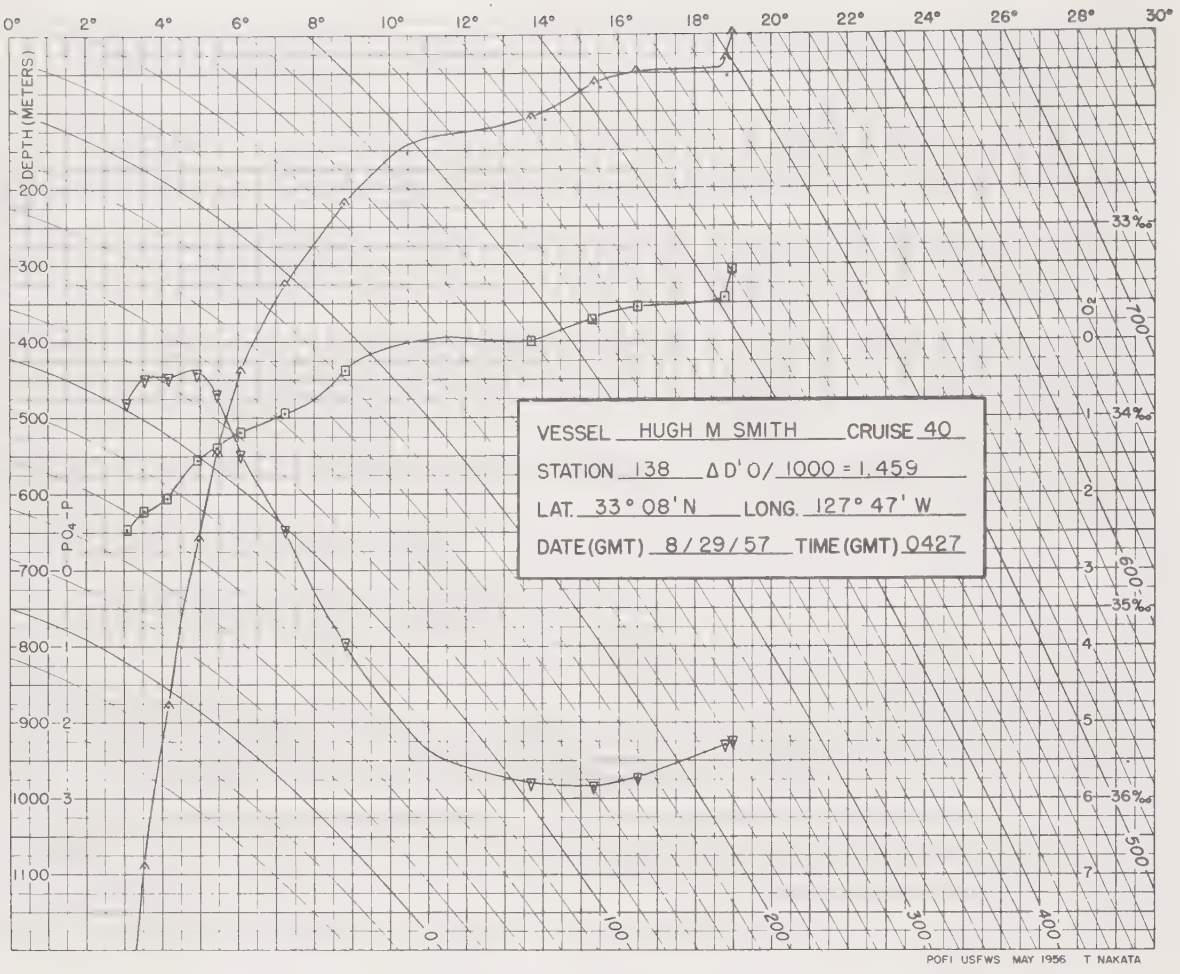
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	13.44	33.60	273.7	5.96	1.12
10	13.44	33.62	272.1	5.96	0.88
24	12.84	33.60	262.3	5.50	1.08
53	10.26	33.71	209.0	3.42	1.86
106	9.25	33.86	182.0	2.42	1.29
212	8.74	34.16	152.1	1.49	2.60
319	8.00	34.23	136.0	1.07	3.07
431	7.10	34.33	116.2	0.62	3.40
539	6.41	34.31	109.0	0.40	2.66
648	5.76	34.38	95.8	0.30	3.17
863	4.74	34.45	79.1	0.27	3.47
1078	4.06	34.56	63.9	0.42	3.43
1283	3.56	34.56	59.1	0.61	2.36


VESSEL HUGH M SMITH CRUISE 40
STATION 136 ΔD' O/ 1000 = 1.420
LAT. 33° 54' N LONG. 125° 36' W
DATE (GMT) 8 / 28 / 57 TIME (GMT) 1326
DEPTH (METERS)
PO4-P
O2
POFI USFWS MAY 1956 T NAKATA

Weather: 00, cloud coverage 3. Wind: 320°, 20 kt. Sea: 3-5 ft. Wire angle: 20°.
BT slide: 386. Dry bulb: 63.0°F. Wet bulb: 58.0°F. Barometric pressure: 1021 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	17.82	33.24	392.9	5.35	0.58
10	17.84	33.22	395.0	5.35	0.54
25	17.84	33.19	397.1	5.37	0.51
55	17.12	33.33	370.3	5.49	0.54
110	11.06	33.30	252.5	5.36	0.76
218	8.80	33.95	168.6	2.31	2.02
328	7.53	34.16	134.7	1.46	2.72
445	6.67	34.22	118.8	0.81	2.85
558	5.87	34.29	103.8	0.48	3.46
671	5.36	34.38	91.3	0.35	3.12
894	4.52	34.45	76.8	0.33	3.39
1117	3.78	34.52	64.2	0.48	3.40
1328	3.25	34.58	55.0	0.76	2.42*
1328					2.17*

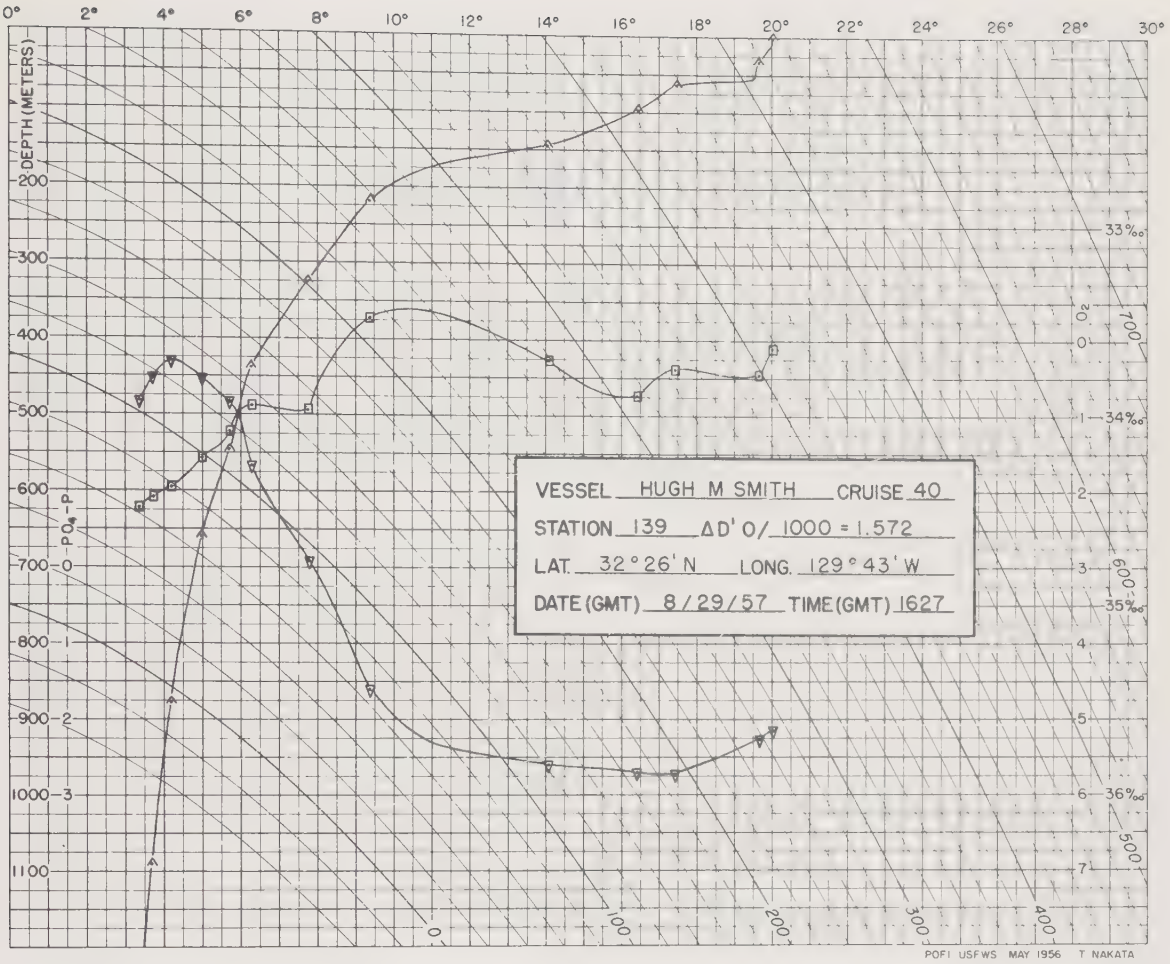
* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


VESSEL HUGH M SMITH CRUISE 40
STATION 138 ΔD' O/ 1000 = 1,459
LAT. 33° 08' N LONG. 127° 47' W
DATE (GMT) 8/29/57 TIME (GMT) 0427
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 4. Wind: 330°, 08 kt. Sea: 1-3 ft. Wire angle: 06°.
BT slide: 392. Dry bulb: 66.1°F. Wet bulb: 61.3°F. Barometric pressure: 1020 mb.

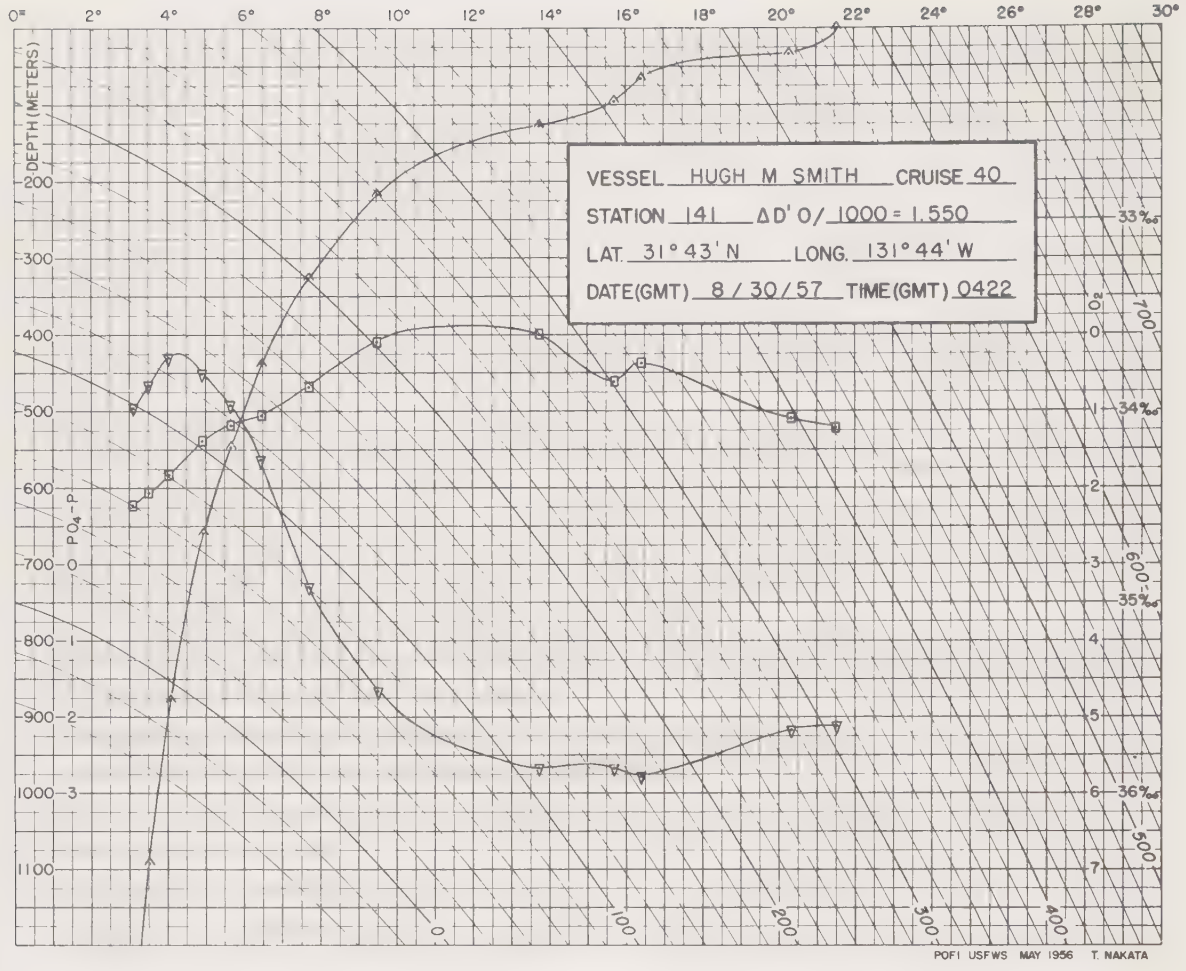
Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	18.98	33.22	421.7	5.25	0.47
32	18.79	33.37	406.1	5.28	0.47
48	16.48	33.42	349.6	5.72	0.49
64	15.34	33.49	320.0	5.84	0.47
107	13.71	33.60	278.9	5.78	0.51
219	8.82	33.75	183.8	3.94	1.88
326	7.24	33.98	144.5	2.45	2.34
439	6.07	34.07	122.6	1.47	3.09
547	5.45	34.16	108.8	0.68	3.35
659	4.94	34.22	98.5	0.39	2.90
878	4.16	34.42	75.4	0.46	3.26
1092	3.54	34.49	64.3	0.47	2.99
1307	3.08	34.58	53.3	0.79	3.01*
1307					3.12*

* Values of duplicate did not agree within 0.02 µg at./L. tolerance so both are carried.


DEPTH (METERS)
VESSEL HUGH M SMITH CRUISE 40
STATION 139 ΔD' O/ 1000 = 1.572
LAT. 32° 26' N LONG. 129° 43' W
DATE (GMT) 8/29/57 TIME (GMT) 1627
POFI USFWS MAY 1956 T NAKATA

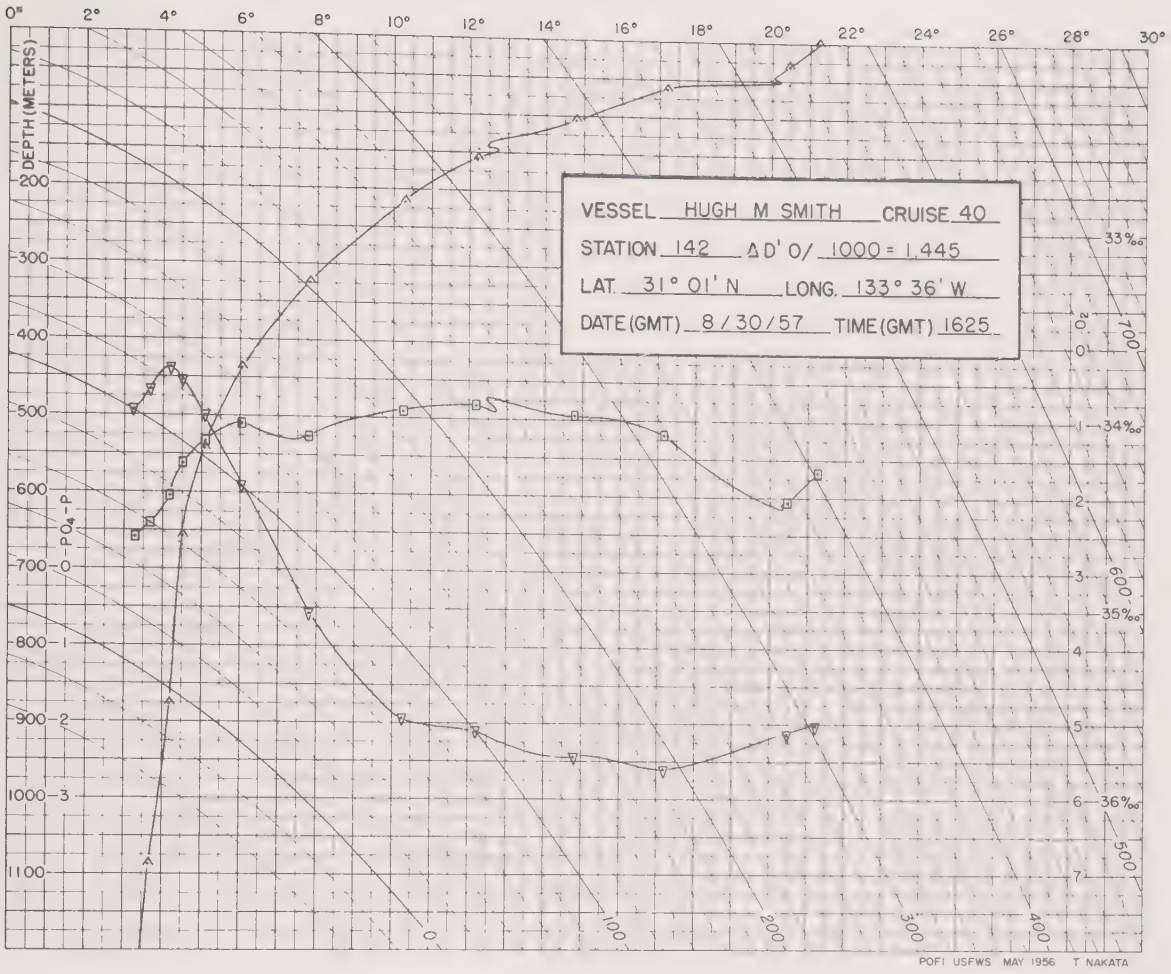
Weather: 02, cloud coverage 1. Wind: 340°, 05 kt. Sea: < 1 ft. Wire angle: 04°.
BT slide: 395. Dry bulb: 67.8°F. Wet bulb: 62.1°F. Barometric pressure: 1020 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	20.02	33.64	416.6	5.16	-
32	19.67	33.78	397.7	5.25	-
64	17.43	33.75	346.8	5.72	-
96	16.43	33.89	314.1	5.71	-
143	14.08	33.71	278.1	5.59	-
218	9.39	33.49	211.6	4.60	-
325	7.77	33.98	151.6	2.92	-
438	6.30	33.95	134.7	1.66	-
546	5.73	34.09	117.3	0.84	-
659	5.00	34.23	98.3	0.54	-
878	4.20	34.38	78.8	0.31	-
1091	3.70	34.43	70.2	0.53	-
1307	3.36	34.49	62.7	0.82	-


VESSEL HUGH M SMITH CRUISE 40
STATION 141 ΔD' 0/ 1000 = 1.550
LAT. 31° 43' N LONG. 131° 44' W
DATE(GMT) 8 / 30 / 57 TIME(GMT) 0422
DEPTH (METERS)
PO4-P
POF1 USFWS MAY 1956 T. NAKATA

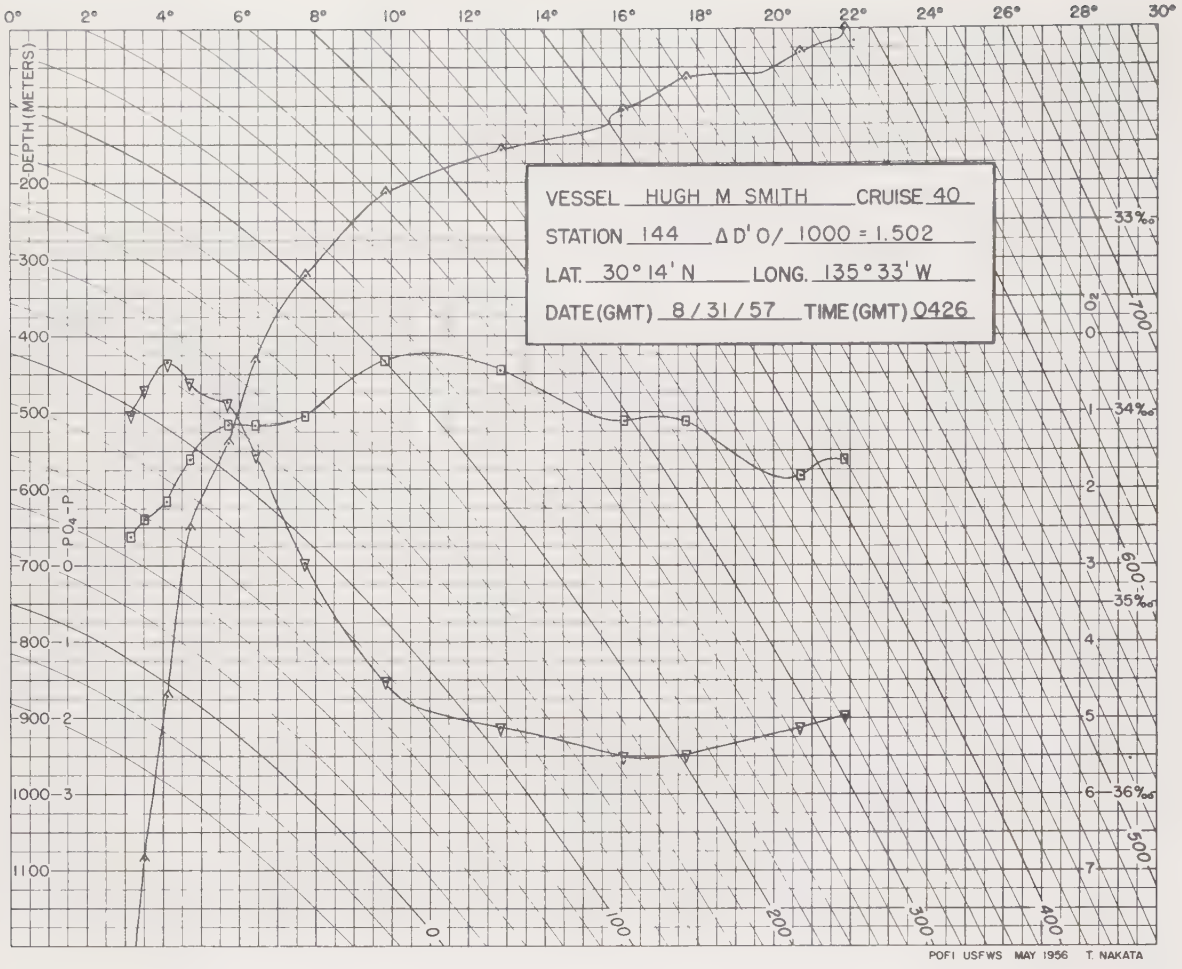
Weather: 02, cloud coverage 3. Wind: 270°, 04 kt. Sea: < 1 ft. Wire angle: 03°.
BT slide: 400. Dry bulb: 70.5°F. Wet bulb: 64.0°F. Barometric pressure: 1020 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	21.54	34.09	423.2	5.13	-
32	20.32	34.04	395.2	5.17	-
64	16.41	33.75	324.0	5.78	-
95	15.71	33.84	302.5	5.67	-
127	13.74	33.60	279.5	5.65	-
217	9.52	33.64	202.4	4.65	-
325	7.72	33.87	159.0	3.29	-
438	6.48	34.02	131.5	1.62	-
546	5.66	34.07	117.8	0.92	-
659	4.94	34.16	103.0	0.50	-
879	4.06	34.33	81.2	0.29	-
1092	3.52	34.43	68.6	0.67	-
1306	3.11	34.49	60.4	0.95	-


VESSEL HUGH M SMITH CRUISE 40
STATION 142 Δ D' O/ 1000 = 1.445
LAT. 31° 01' N LONG. 133° 36' W
DATE (GMT) 8/30/57 TIME (GMT) 1625
DEPTH (METERS)
O - PO4 - P
POF! USFWS MAY 1956 T NAKATA

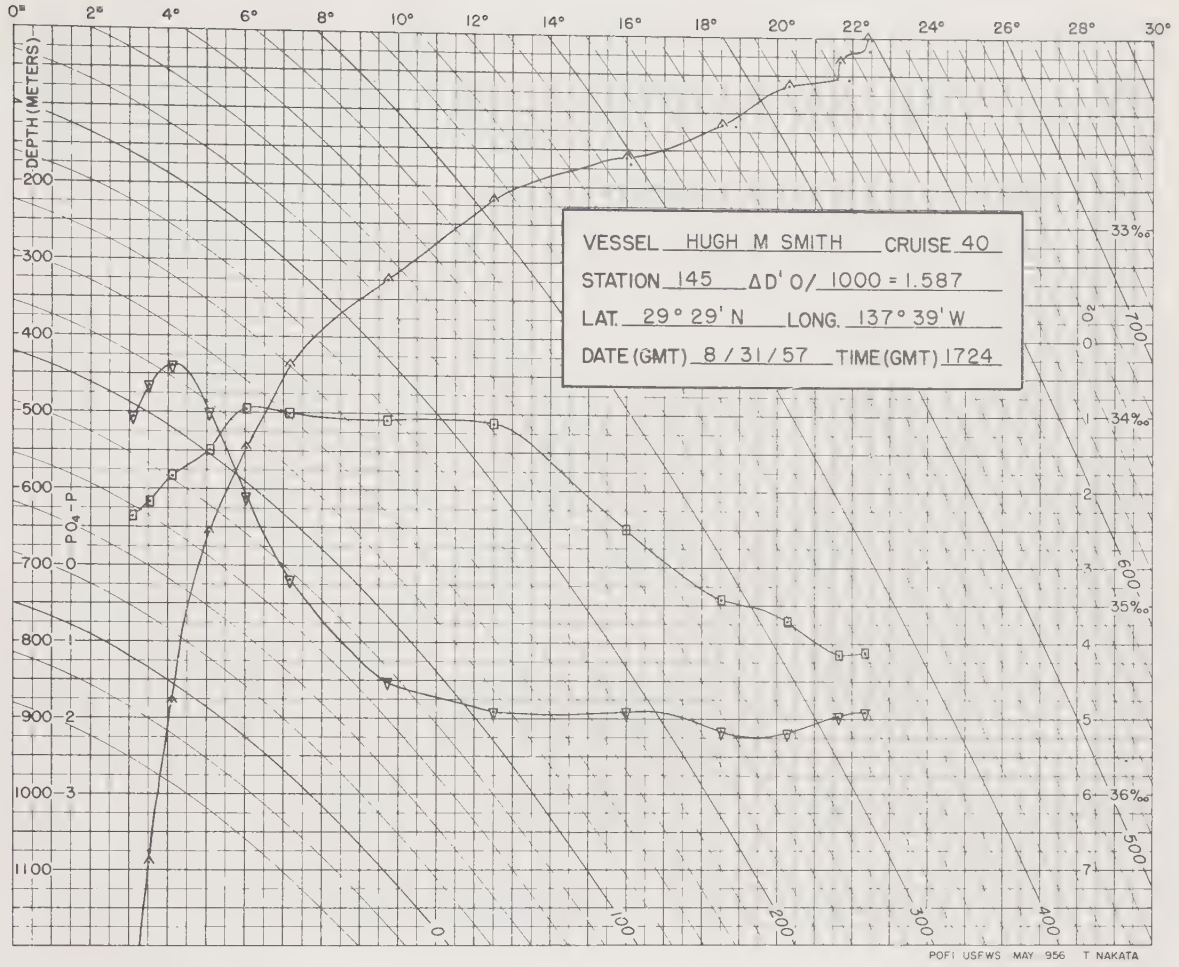
Weather: 03, cloud coverage 4. Wind: 270°, 08 kt. Sea: < 1 ft. Wire angle: 05°.
BT slide: 404. Dry bulb: 72.0°F. Wet bulb: 67.6°F. Barometric pressure: 1021 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	21.24	34.27	402.4	5.03	-
31	20.44	34.43	370.1	5.13	-
63	17.18	34.07	317.7	5.61	-
105	14.80	33.98	273.0	5.45	-
158	12.20	33.93	226.2	5.11	-
216	10.26	33.96	190.5	4.94	-
324	7.81	34.11	142.4	3.57	-
438	6.04	34.04	124.6	1.91	-
544	5.08	34.14	106.0	1.02	-
658	4.52	34.25	91.9	0.54	-
877	4.19	34.42	75.7	0.38	-
1088	3.66	34.56	60.2	0.67	-
1303	3.26	34.63	51.2	0.92	-


VESSEL HUGH M SMITH CRUISE 40
STATION 144 Δ D' O/ 1000 = 1.502
LAT. 30° 14' N LONG. 135° 33' W
DATE (GMT) 8 / 31 / 57 TIME (GMT) 0426
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T. NAKATA

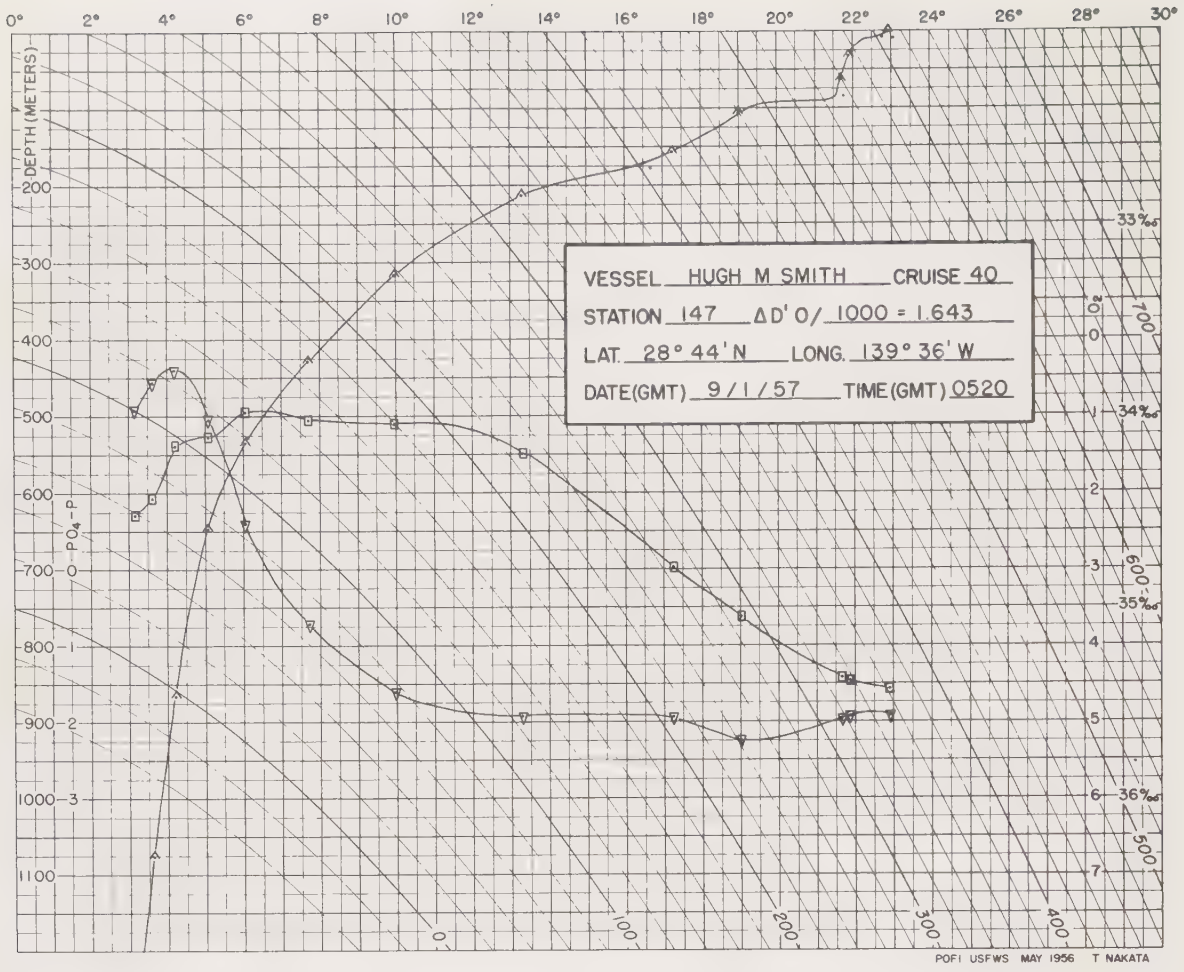
Weather 02, cloud coverage 2. Wind: 280°, 09 kt. Sea: < 1 ft. Wire angle: 07°.
BT slide: 408. Dry bulb: 72.5°F. Wet bulb: 68.0°F. Barometric pressure: 1021 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	21.84	34.25	419.3	4.98	-
31	20.69	34.33	383.7	5.13	-
63	17.70	34.05	331.2	5.49	-
104	16.06	34.05	294.3	5.51	-
157	12.86	33.78	249.5	5.12	-
214	9.84	33.73	201.0	4.52	-
320	7.74	34.02	148.3	2.97	-
433	6.44	34.07	127.3	1.55	-
541	5.70	34.07	118.3	0.87	-
653	4.72	34.25	94.0	0.60	-
871	4.10	34.47	71.0	0.34	-
1086	3.52	34.56	58.8	0.70	-
1302	3.16	34.65	48.7	1.03	-


VESSEL HUGH M SMITH CRUISE 40
STATION 145 ΔD' O/ 1000 = 1.587
LAT. 29° 29' N LONG. 137° 39' W
DATE (GMT) 8 / 31 / 57 TIME (GMT) 1724
DEPTH (METERS)
PO4 - P
33‰
34‰
35‰
36‰
POF: USFWS MAY 956 T NAKATA

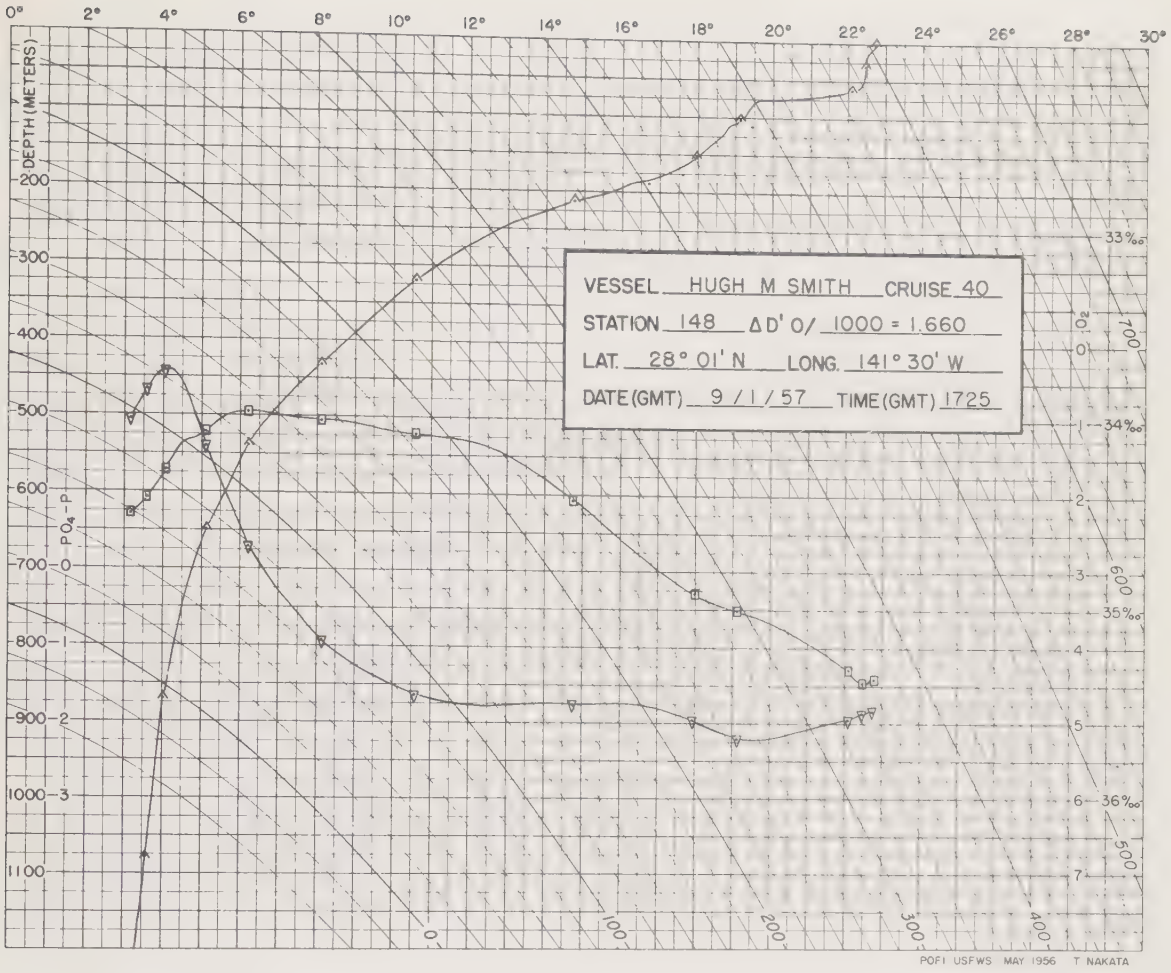
Weather: 03, cloud coverage 5. Wind: 280°, 09 kt. Sea: < 1 ft. Wire angle: 05°.
BT slide: 412. Dry bulb: 72.9°F. Wet bulb: 68.4°F. Barometric pressure: 1023 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	22.38	35.25	361.5	4.91	-
31	21.64	35.26	341.1	4.98	-
63	20.27	35.08	318.7	5.19	-
105	18.55	34.97	284.3	5.17	-
158	16.00	34.60	253.1	4.90	-
217	12.51	34.05	223.1	4.91	-
324	9.74	34.04	176.4	4.52	-
438	7.20	34.00	142.1	3.19	-
545	6.05	33.98	129.3	2.11	-
658	5.08	34.20	101.4	1.00	-
878	4.12	34.33	81.8	0.39	-
1090	3.54	34.47	65.9	0.64	-
1305	3.12	34.54	56.7	1.05	-


VESSEL HUGH M SMITH CRUISE 40
STATION 147 ΔD' O/ 1000 = 1.643
LAT. 28° 44' N LONG. 139° 36' W
DATE(GMT) 9/1/57 TIME(GMT) 0520
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

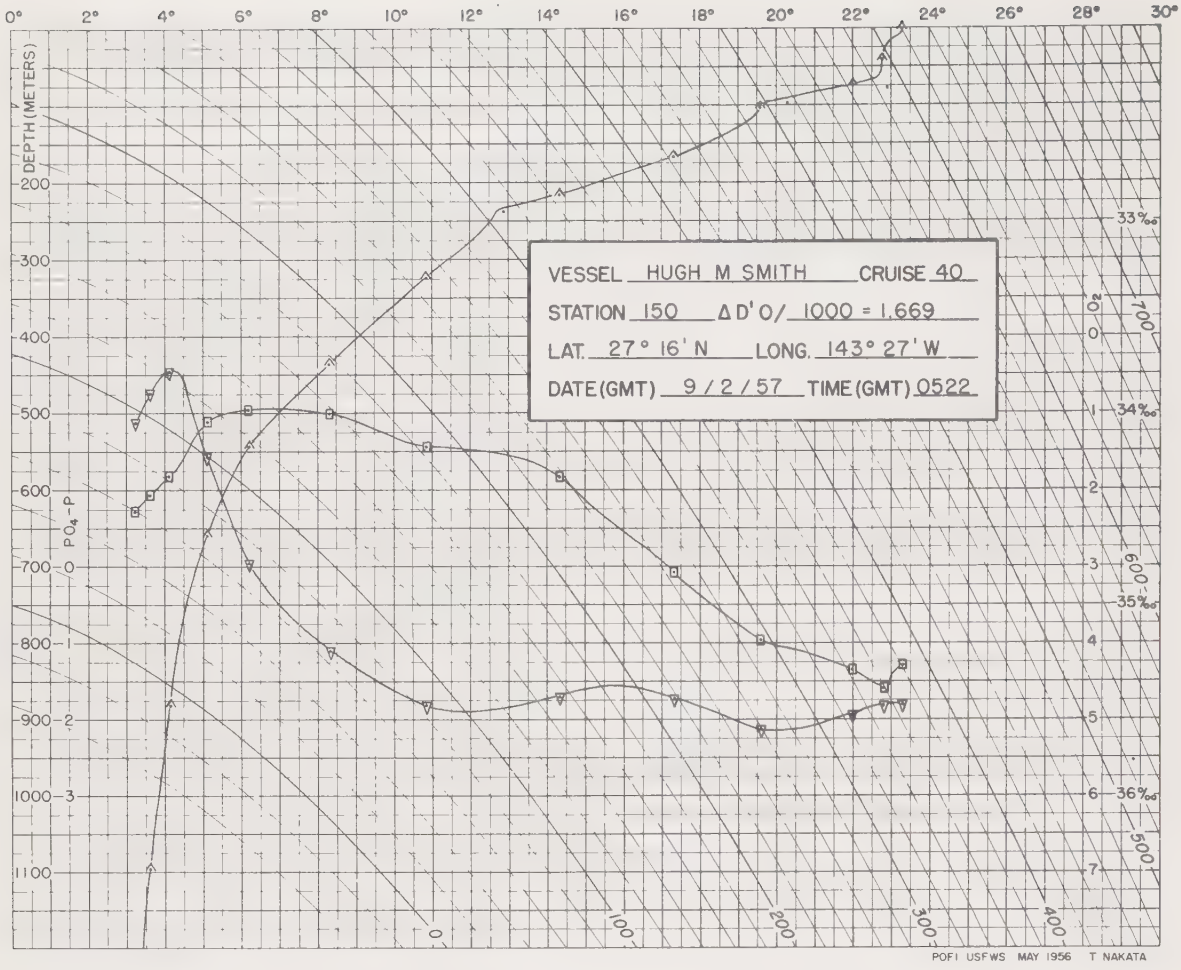
Weather: 21, cloud coverage 8. Wind: 330°, 05 kt. Sea: < 1 ft. Wire angle: 10°.
BT slide: 416. Dry bulb: 73.7°F. Wet bulb: 69.0°F. Barometric pressure: 1024 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	22.94	35.43	363.6	4.91	-
31	21.86	35.39	337.5	4.92	-
62	21.66	35.37	333.6	4.96	-
103	19.03	35.05	290.1	5.23	-
155	17.26	34.79	267.3	4.92	-
212	13.34	34.20	227.9	4.91	-
317	9.98	34.04	180.0	4.61	-
429	7.74	34.02	148.3	3.70	-
536	6.04	33.98	129.1	2.40	-
647	5.09	34.11	108.3	1.06	-
866	4.22	34.16	95.6	0.40	-
1077	3.62	34.43	69.5	0.56	-
1293	3.18	34.52	58.8	0.91	-


VESSEL HUGH M SMITH CRUISE 40
STATION 148 ΔD' O/ 1000 = 1.660
LAT. 28° 01' N LONG. 141° 30' W
DATE (GMT) 9 / 1 / 57 TIME (GMT) 1725
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

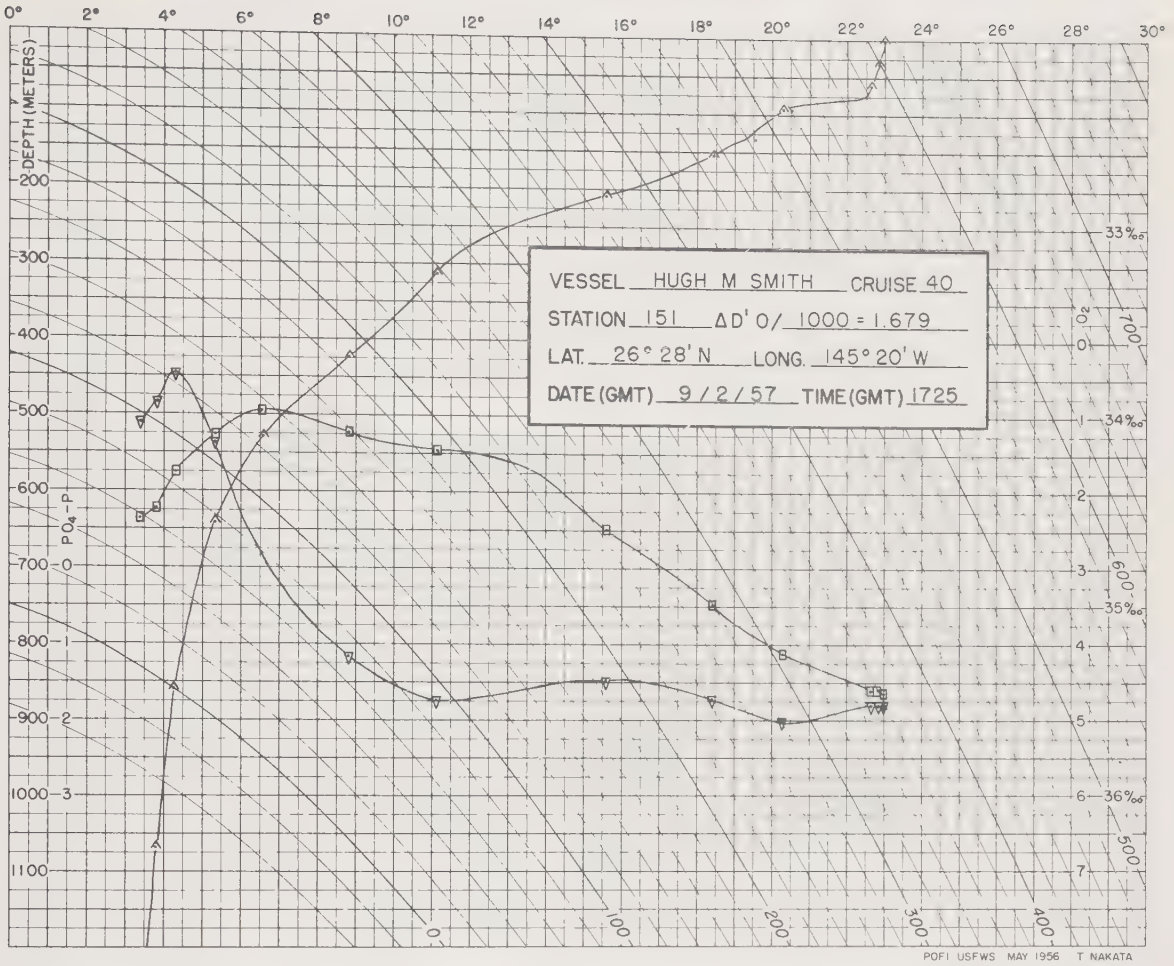
Weather: 03, cloud coverage 4. Wind: 030°, 08 kt. Sea: < 1 ft. Wire angle: 11°.
BT slide: 420. Dry bulb: 74.9°F. Wet bulb: 69.1°F. Barometric pressure: 1023 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	22.76	35.37	363.1	4.84	-
31	22.46	35.39	353.5	4.86	-
62	22.10	35.32	348.9	4.97	-
103	19.14	35.01	295.6	5.21	-
154	17.96	34.92	273.9	4.96	-
213	14.76	34.43	239.2	4.75	-
318	10.58	34.09	186.3	4.63	-
431	8.13	34.02	153.5	3.94	-
538	6.23	33.98	131.3	2.71	-
651	5.11	34.09	110.1	1.40	-
869	4.05	34.29	84.1	0.42	-
1081	3.58	34.43	69.2	0.66	-
1292	3.16	34.52	58.5	1.05	-


VESSEL HUGH M SMITH CRUISE 40
STATION 150 ΔD'O/1000 = 1.669
LAT. 27° 16' N LONG. 143° 27' W
DATE(GMT) 9/2/57 TIME(GMT) 0522
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

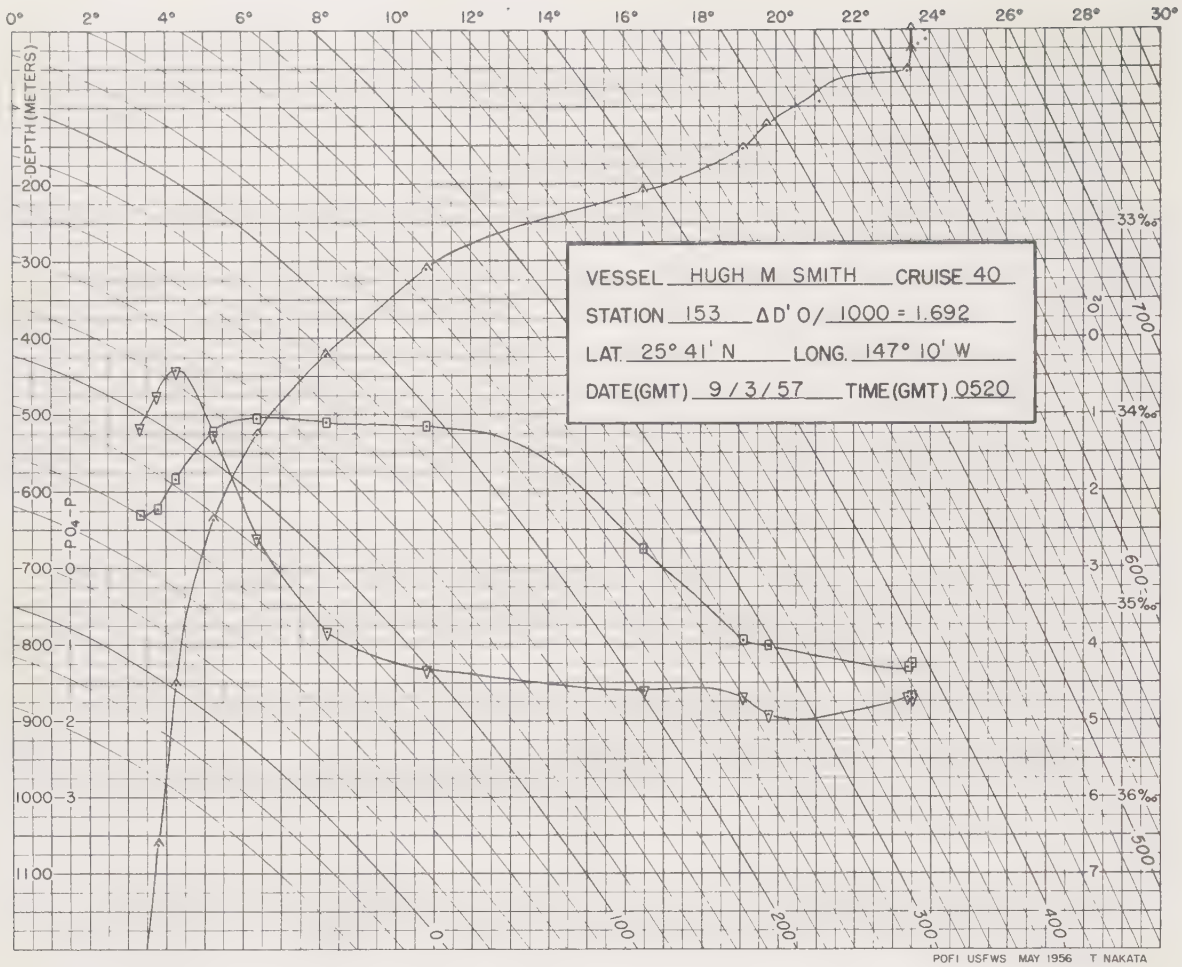
Weather: 02, cloud coverage 2. Wind: 050°, 10 kt. Sea: < 1 ft. Wire angle: 01°.
BT slide: 424. Dry bulb: 74.0°F. Wet bulb: 69.9°F. Barometric pressure: 1022 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	23.29	35.32	381.2	4.80	-
41	22.78	35.44	358.5	4.81	-
72	21.98	35.34	344.3	4.94	-
104	19.59	35.19	293.6	5.13	-
167	17.34	34.83	266.2	4.72	-
215	14.35	34.33	238.3	4.71	-
322	10.86	34.18	184.3	4.80	-
436	8.34	34.00 Q	157.9	4.09	-
545	6.22	33.98	131.2	2.95	-
659	5.12	34.05	113.3	1.58	-
881	4.13	34.33	81.8	0.44	-
1094	3.62	34.43	69.5	0.73	-
1307	3.24	34.51	60.1	1.12	-


VESSEL HUGH M SMITH CRUISE 40
STATION 151 ΔD' O/ 1000 = 1.679
LAT. 26° 28' N LONG. 145° 20' W
DATE (GMT) 9 / 2 / 57 TIME (GMT) 1725
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

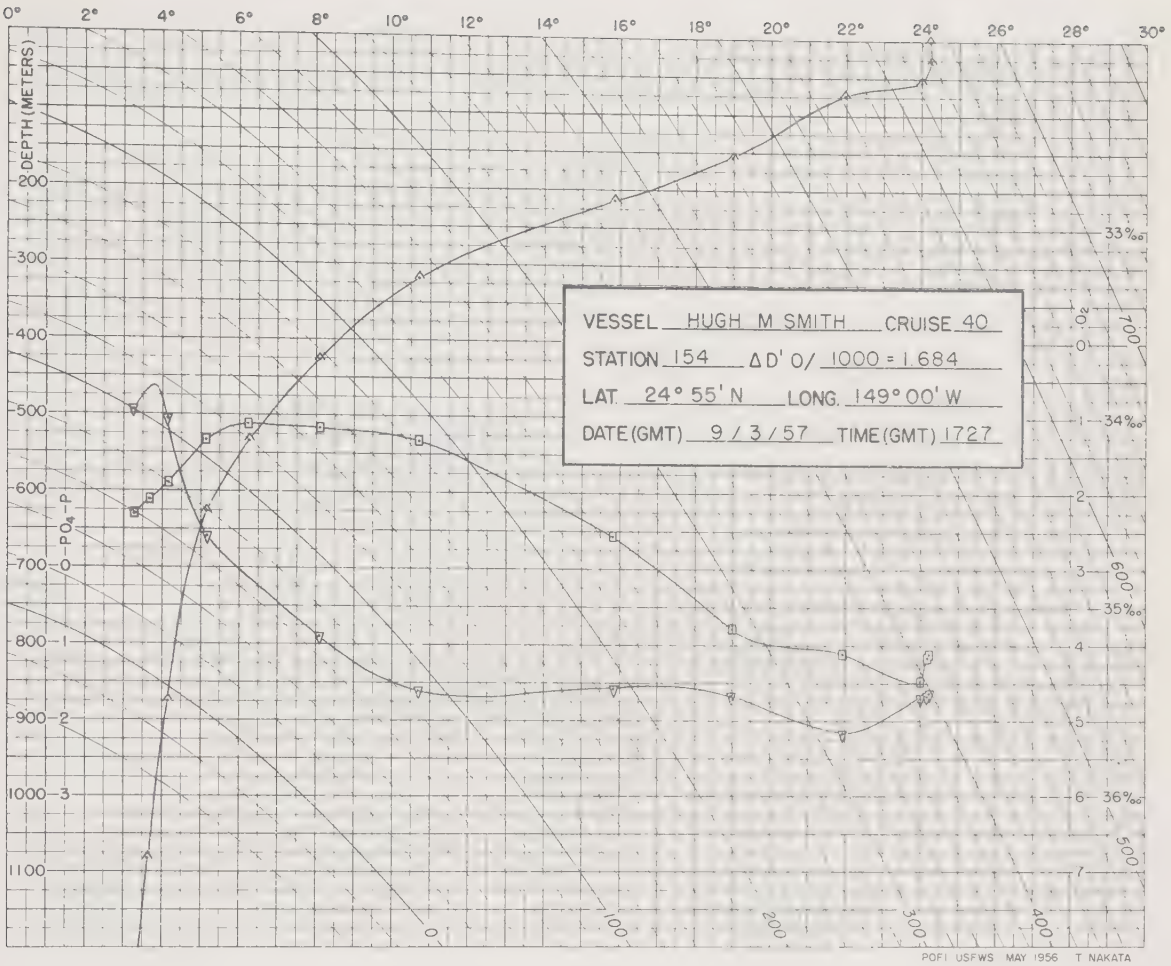
Weather: 21, cloud coverage 6. Wind: 050°, 05 kt. Sea: 1-3 ft. Wire angle 16°.
BT slide: 428. Dry bulb: 74.0°F. Wet bulb: 69.3°F. Barometric pressure: 1022 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	22.99	35.46	362.7	4.80	-
30	22.86	35.44	360.7	4.79	-
61	22.65	35.44	355.0	4.81	-
91	20.30	35.25	307.1	5.02	-
153	18.44	34.99	280.3	4.71	-
209	15.60	34.60	244.5	4.48	-
312	11.14	34.18	189.1	4.73	-
424	8.82	34.09	158.4	4.17	-
530	6.57	33.98	135.6	NG	-
641	5.34	34.11	111.3	1.38	-
859	4.30	34.31	85.1	0.47	-
1068	3.81	34.49	66.9	0.84	-
1283	3.38	34.54	59.1	1.10	-


VESSEL HUGH M SMITH CRUISE 40
STATION 153 ΔD' O/ 1000 = 1.692
LAT. 25° 41' N LONG. 147° 10' W
DATE(GMT) 9/3/57 TIME(GMT) 0520
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

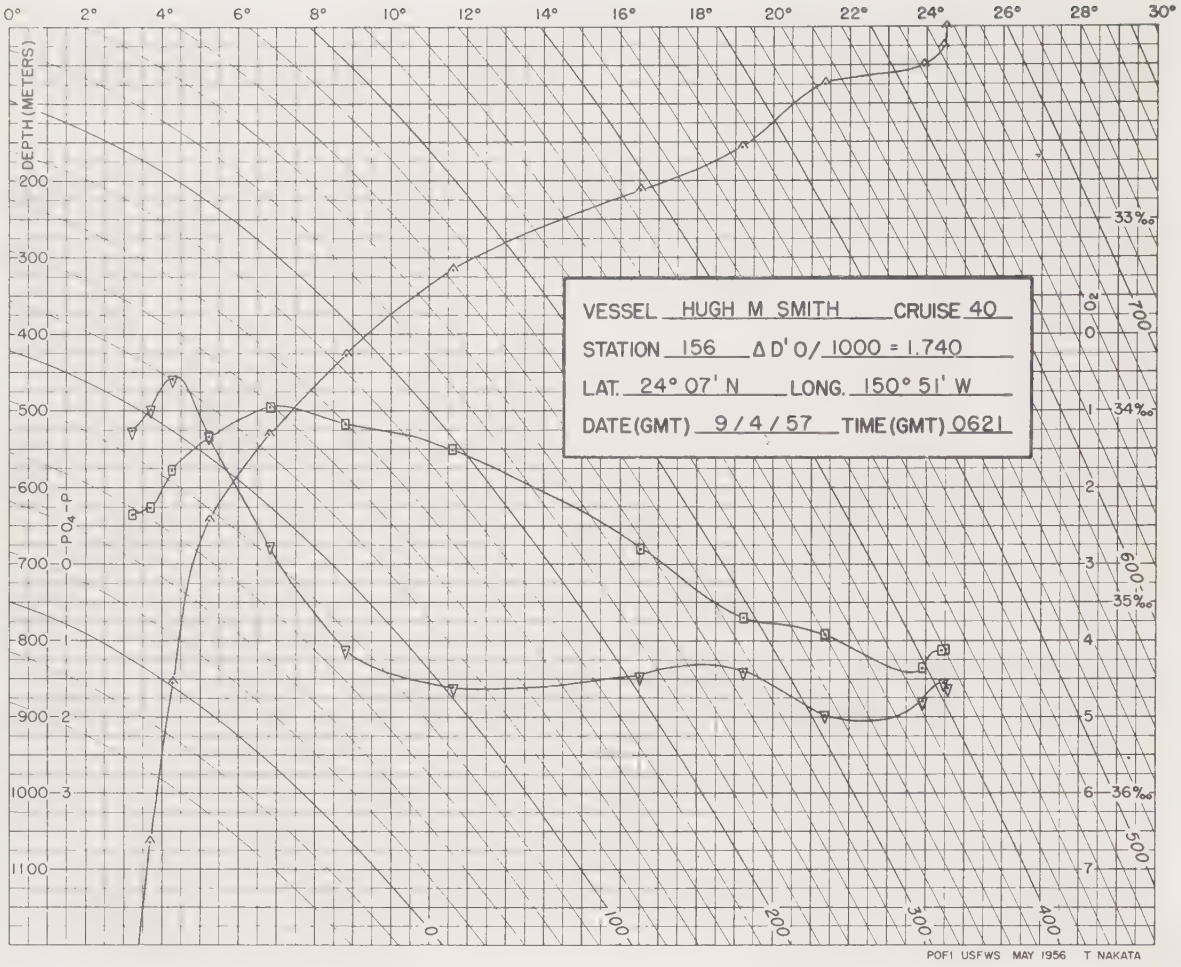
Weather: 02, cloud coverage 7. Wind: 070°, 10 kt. Sea: 1-3 ft. Wire angle: 15°.
BT slide: 431. Dry bulb: 75.9°F. Wet bulb: 70.9°F. Barometric pressure: 1019 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	23.54	35.30	389.6	4.71	-
25	23.52	35.30	389.0	4.67	-
51	23.42	35.32	384.9	4.69	-
122	19.76	35.21	296.3	4.90	-
152	19.11	35.17	283.3	4.68	-
209	16.50	34.70	256.6	4.59	-
310	10.84	34.05	193.5	4.32	-
421	8.21	34.04	153.3	3.82	-
527	6.39	34.02	130.3	2.61	-
637	5.26	34.09	111.8	1.24	-
852	4.26	34.33	83.1	0.42	-
1061	3.78	34.49	66.5	0.73	-
1273	3.34	34.52	60.3	1.17	-


VESSEL HUGH M SMITH CRUISE 40
STATION 154 ΔD' O/ 1000 = 1.684
LAT. 24° 55' N LONG. 149° 00' W
DATE (GMT) 9 / 3 / 57 TIME (GMT) 1727
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

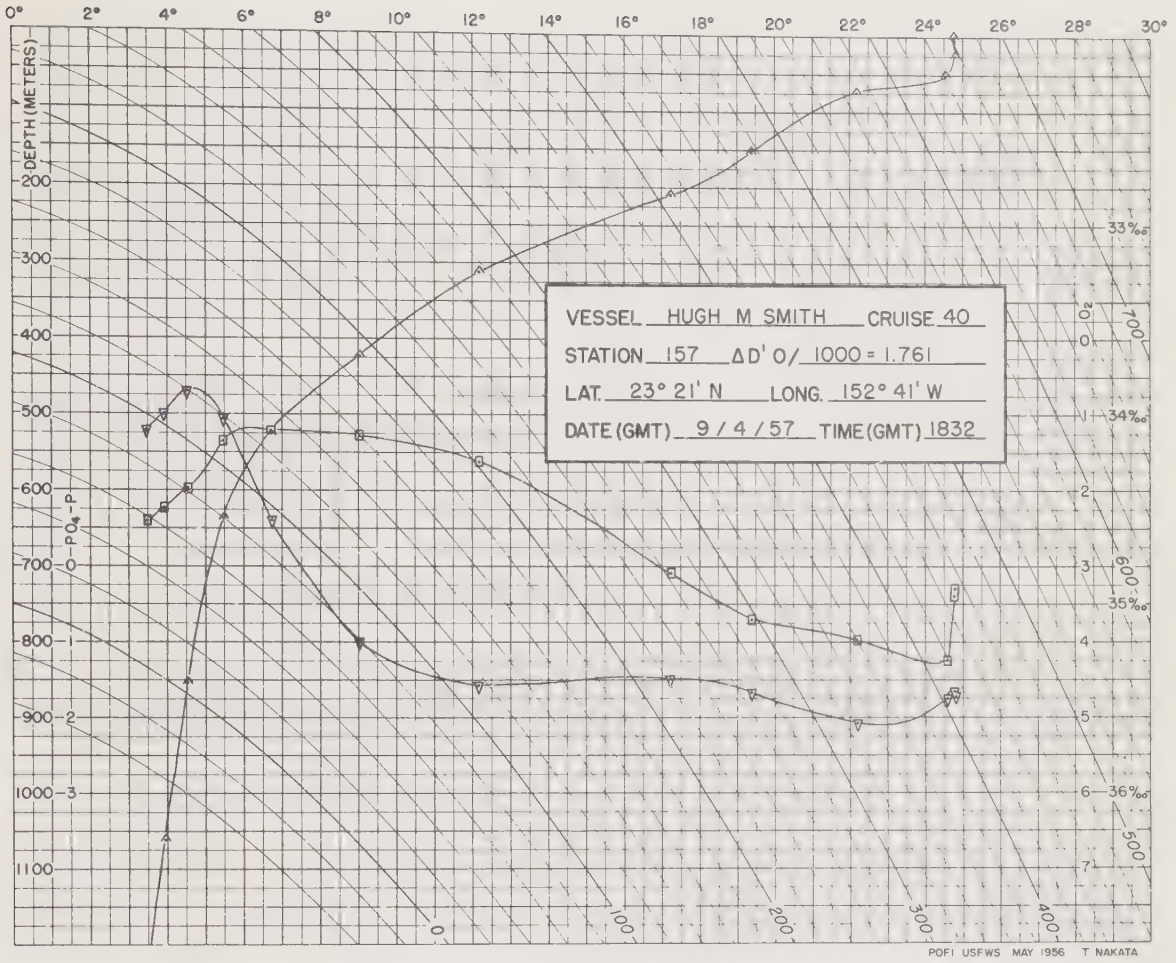
Weather: 02, cloud coverage 6. Wind: 070°, 15 kt. Sea: 1-3 ft. Wire angle: 07°, 06°. BT slide: 435. Dry bulb: 73.8°F. Wet bulb: 71.3°F. Barometric pressure: 1019 mb.

	Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
	0	24.21	35.26	411.5	4.66	-
	26	24.24	35.25	413.1	4.64	-
	53	24.00	35.39	396.3	4.70	-
	73	21.92	35.25	349.2	5.17	-
	157	18.95	35.12	283.2	4.67	-
	214	15.85	34.63	247.6	4.57	-
	318	10.71	34.13	185.4	4.62	-
	427	8.10	34.07	149.4	3.89	-
	630	5.16	34.14	107.0	2.60	-
	877	4.16	34.36	80.0	1.06	-
	1083	3.66	34.45	68.4	NG	-
I	1294	3.28	34.52	59.7	0.93	-
II	536	6.28	34.05	126.5	-	-


VESSEL HUGH M SMITH CRUISE 40
STATION 156 Δ D' O/ 1000 = 1.740
LAT. 24° 07' N LONG. 150° 51' W
DATE(GMT) 9/4/57 TIME(GMT) 0621
DEPTH (METERS)
PO4-P
POF1 USFWS MAY 1956 T NAKATA

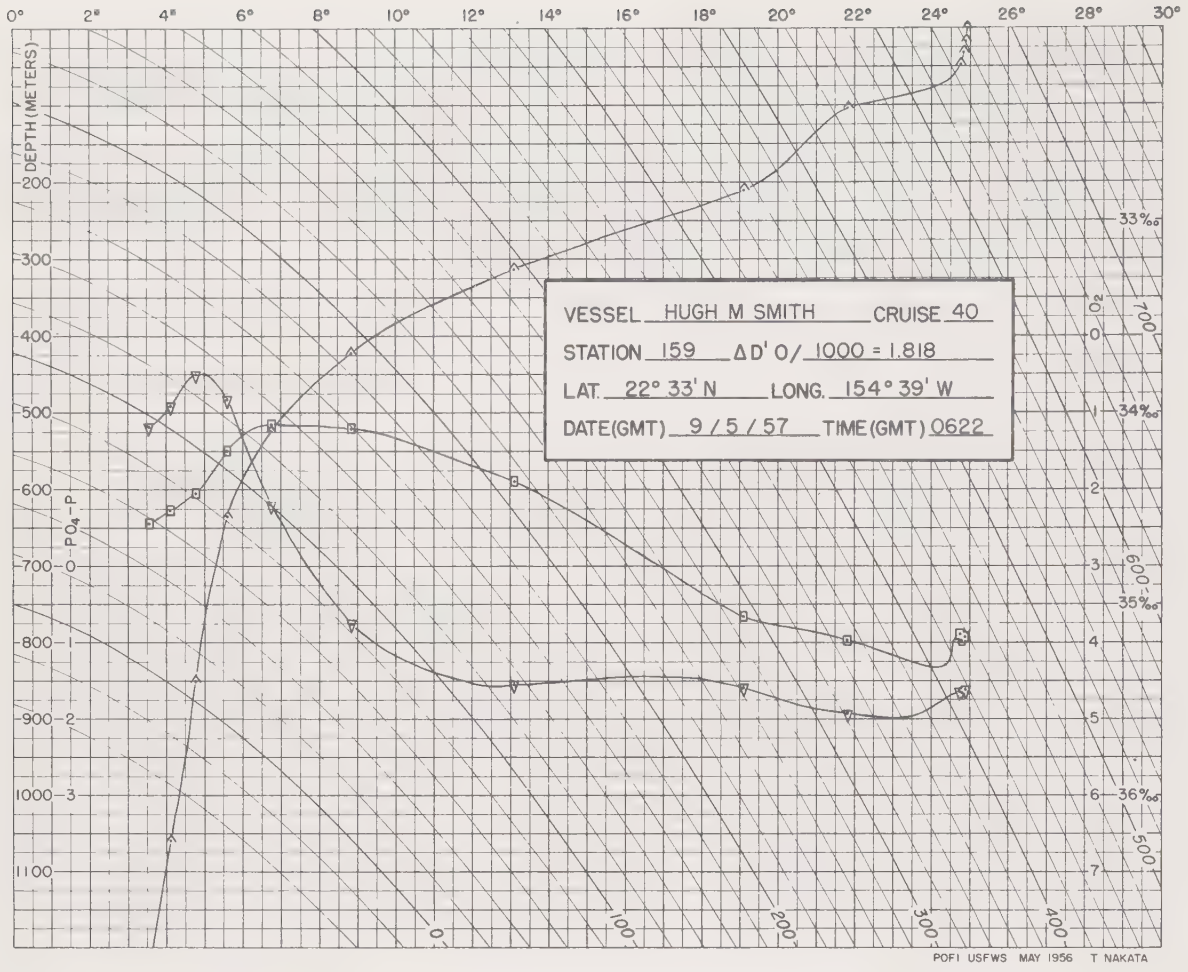
Weather: 00, cloud coverage 6. Wind: 100°, 07 kt. Sea: < 1 ft. Wire angle: 11°.
BT slide: 439. Dry bulb: 75.2°F. Wet bulb: 71.3°F. Barometric pressure: 1019 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	24.54	35.25	421.6	4.62	-
25	24.45	35.25	419.1	4.57	-
51	23.92	35.35	396.8	4.80	-
72	21.36	35.17	340.3	4.98	-
155	19.23	35.08	292.8	4.41	-
212	16.56	34.72	256.6	4.46	-
315	11.63	34.20	196.2	4.60	-
426	8.83	34.07	160.0	4.10	-
531	6.86	33.98	139.4	2.74	-
642	5.26	34.14	108.1	1.35	-
856	4.30	34.31	85.1	0.57	-
1063	3.72	34.51	64.4	0.98	-
1274	3.24	34.54	57.8	1.26	-


VESSEL HUGH M SMITH CRUISE 40
STATION 157 ΔD' O/ 1000 = 1.761
LAT. 23° 21' N LONG. 152° 41' W
DATE (GMT) 9 / 4 / 57 TIME (GMT) 1832
DEPTH (METERS)
P04-P
POFI USFWS MAY 1956 T NAKATA

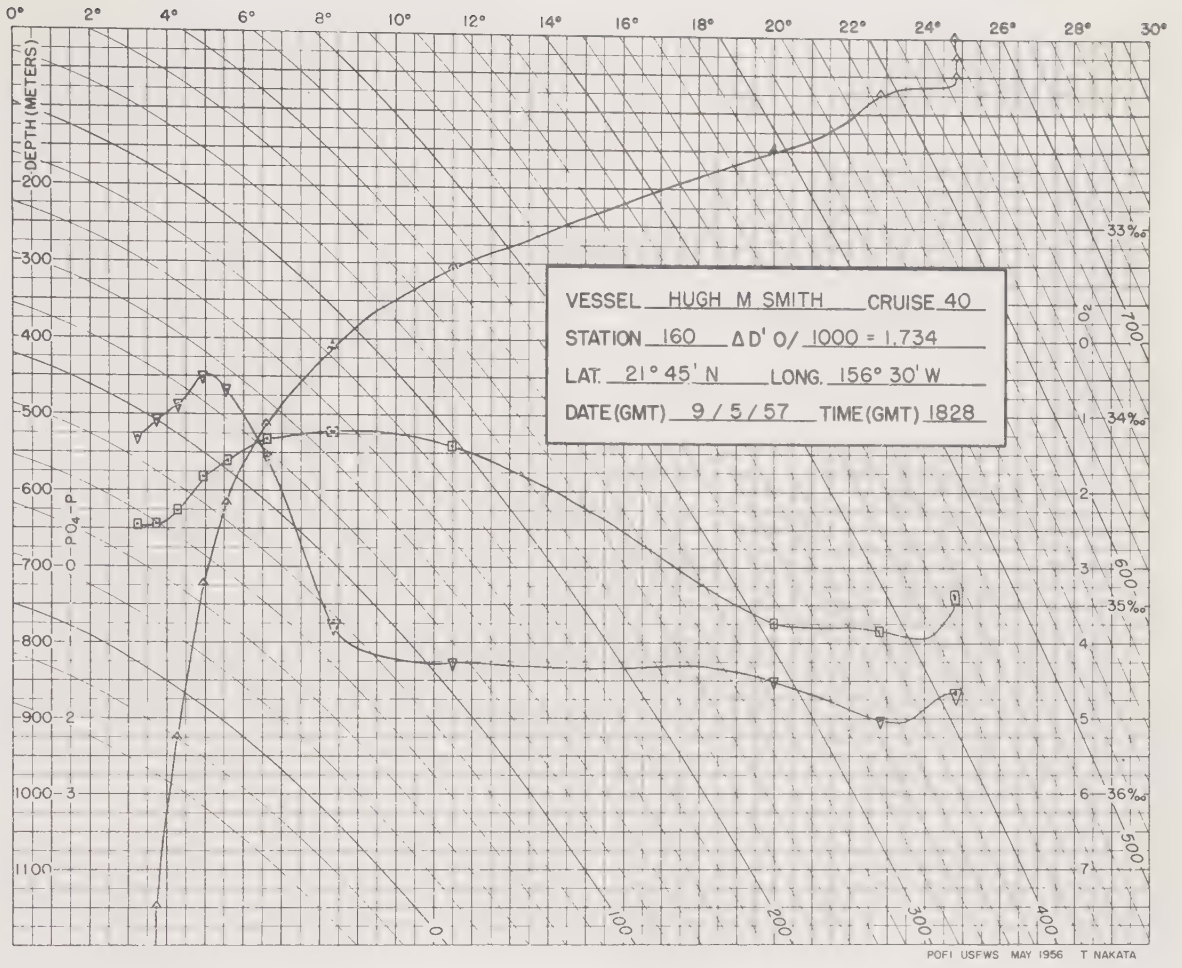
Weather: 15, cloud coverage 6. Wind: 070°, 14 kt. Sea: 3-5 ft. Wire angle: 15°.
BT slide: 443. Dry bulb: 76.5°F. Wet bulb: 72.8°F. Barometric pressure: 1018 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	24.80	34.92	452.9	4.73	-
25	24.78	34.96	449.4	4.67	-
51	24.59	35.30	419.5	4.76	-
72	22.20	35.19	361.0	5.07	-
153	19.40	35.08	297.0	4.67	-
210	17.24	34.83	263.9	4.49	-
312	12.20	34.25	202.5	4.58	-
421	9.04	34.11	160.3	4.00	-
525	6.74	34.09	129.5	2.39	-
636	5.47	34.14	110.4	1.05	-
853	4.56	34.38	82.5	0.69	-
1061	3.92	34.49	67.9	0.99	-
1275	3.47	34.56	58.3	1.19	-


VESSEL HUGH M SMITH CRUISE 40
STATION 159 ΔD' O/ 1000 = 1.818
LAT. 22° 33' N LONG. 154° 39' W
DATE(GMT) 9 / 5 / 57 TIME(GMT) 0622
DEPTH (METERS)
PO4-P
O2
POFI USFWS MAY 1956 T NAKATA

Weather: 02, cloud coverage 2. Wind: 060°, 07 kt. Sea: 1-3 ft. Wire angle: 15°.
BT slide: 447. Dry bulb: 77.4°F. Wet bulb: 70.9°F. Barometric pressure: 1017 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	24.90	35.17	437.7	4.63	-
15	24.89	35.16	438.2	4.62	-
31	24.82	35.19	434.1	4.66	-
46	24.76	35.16	434.4	4.63	-
102	21.82	35.19	350.9	4.92	-
210	19.14	35.07	291.3	4.59	-
313	13.12	34.36	211.7	4.55	-
423	8.86	34.09	159.0	3.76	-
527	6.76	34.07	131.2	2.21	-
637	5.62	34.20	107.8	0.84	-
852	4.79	34.42	81.7	0.51	-
1058	4.14	34.51	68.5	0.92	-
1266	3.56	34.58	57.8	1.19	-


VESSEL HUGH M SMITH CRUISE 40
STATION 160 Δ D' O/ 1000 = 1.734
LAT. 21° 45' N LONG. 156° 30' W
DATE (GMT) 9 / 5 / 57 TIME (GMT) 1828
DEPTH (METERS)
PO4-P
POFI USFWS MAY 1956 T NAKATA

Weather: 03, cloud coverage 8. Wind: 090°, 18 kt. Sea: 3-5 ft. Wire angle: 20°.
BT slide: 450. Dry bulb: 76.6°F. Wet bulb: 72.2°F. Barometric pressure: 1016 mb.

Depth, m.	T, °C.	S, °/oo	δ t, cl./ton	O_2, ml./L.	PO_4-P, µg at./L.
0	24.80	34.94	451.4	4.67	-
25	24.84	34.96	451.1	4.68	-
50	24.84	34.97	450.4	4.65	-
75	22.82	35.14	381.2	5.03	-
151	20.00	35.10	310.5	4.52	-
307	11.52	34.16	197.2	4.27	-
413	8.34	34.09	151.4	3.75	-
514	6.65	34.13	125.3	1.55	-
619	5.57	34.25	103.4	0.68	-
725	4.96	34.33	90.3	0.51	-
928	4.29	34.51	69.9	0.88	-
1152	3.74	34.58	59.4	1.07	-
1367	3.25	34.58	54.9	1.30	-